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ABSTRACT

A comprehensive review of the public education system in Soviet Azerbaijan, this book traces the system's development since its establishment in 1920; it examines the system's context, goals, and organization, and analyzes its achievements and their economic effects. Two sections (four chapters each) cover the periods before and since the mid-1960's. The chapters' topics are as follows: (1) education before 1920, the school system's initial goals and activities, and the anti-illiteracy campaign through 1959; (2) the development of universal 8-year schooling through the forties, fifties, and early sixties, including efforts to make education more practical and improve teacher training; (3) creating a "new intelligentsia" to further revolutionary goals, while preserving Azerbaijanian culture; (4) the development and "Azerbaijanization" of programs to train specialists; (5) the establishment of 10-year compulsory education in the late 1960's, attendant problems, and new policy approaches and methods; (6) the influence of scientific and technological progress in training of specialists and skilled workers; (7) the relationship of higher education to economic and technological progress, and planning methods designed to strengthen that relationship; and (8) the international significance of Azerbaijan's accomplishment. Tables of demographic, economic, and educational data are appended. (MCG)

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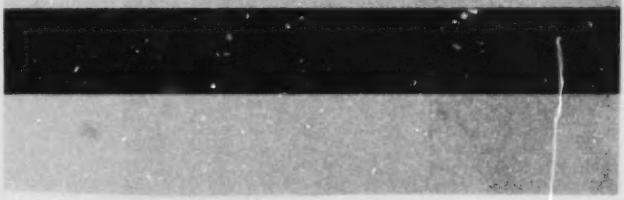

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PREFACE

This publication is the result of a fruitful cooperation which developed between the International Institute for Educational Planning and a team of specialists from the Azerbaijan State University, the Academy of Sciences of the Azerbaijan SSR and the Republic's Ministry of Higher and Specialized Secondary Education, within the framework of a research project bearing on the relationship between education, industrialization and technical progress.

In keeping with its fundamental mission to contribute to the exchange of national experiences concerning the place of educational planning and extension within the planning of economic and social development the IIEP launched this study in January 1982.

It follows on from completed work or fits in with other studies under way. The results of six case studies prepared in conformity with the principal guidelines of the project have already been published:

"Higher education and technical and economic development in Hungary", by János Timar;

"The influence of technical progress on the level and structure of professional qualifications in Poland", by Zdzislaw Grzelak;

"Industrial structures, technological changes and higher education in Portugal", by T. Ambrosio, R. Avakov, L. Tiburcio;

"Education, employment and development in the German Democratic Republic", by K. Körn;

"Relations between education and technical progress in

agriculture in Sudan: training of specialists", by M. Gutelman, in collaboration with the National Sudanese Team;

"Higher education, employment and technical progress in the USSR", by D. Chuprunov, R. Avakov, E. Jiltsov.

Four other case studies devoted to the experiences of Cuba, Mexico, Togo and Tunisia are in the course of completion.

Furthermore, certain conceptual aspects of the problems involved here have been developed in four IIEP publications:

"The contributions of education to industrialization and technical progress in developing countries", by R. Avakov, P. Zagefka;

"Integrating the planning of education and technology", by P. F. Gonod

"Scientific and technical progress and job qualifications", by N. P. Ivanov;

"Planning for education and training within the strategy for food self-sufficiency in the Sahel (relations between education and technical progress in rural areas with weak resources)", by L. Ziéglé.

The choice of the experience of Soviet Azerbaijan, one of the fifteen republics of the USSR, is significant in several respects. Since the establishment of Soviet power in 1920, this republic whose population was practically illiterate has come an extraordinary distance in education. In half a century, after having brought literacy to the entire population and schooling to all those of school age, it achieved, ten years ago now, the goal of introducing general compulsory education at upper secondary level (10 years of study).

By drawing the attention of specialists from other countries and of all those concerned with education, today and in the future, to the Azerbaijan experience, the Institute hopes to have given prominence to certain aspects of educational development of interest to many countries, and notably developing nations. In this connection, certain characteristics of the Azerbaijan achievement deserve to be mentioned:

—the rapid spread of the literacy movement in what had been an extremely backward region, in spite of strong opposition from conservative sections of society;

—the creation of a new type of school, one of whose essential principles continues to be teaching in the mother tongue, for which to start with, there were neither classroom material of any kind, nor professional teachers;

—the development of an original system of polytechnical teaching, which enables personal and multiform links to be established between educational and training structures on the one hand and those of production on the other; in this way, a "basic enterprise" invited by the law to provide pupils and studen with practical courses and vocational experience;

—the development of varied forms of out-of-school education as part of a policy of lifelong education; thus each year a fifth of all engineers and middle-and upper-level technicians, as well as all teachers, can benefit from refresher courses and further training;

—the application of a planning system aimed both at reconciling social demand with the manpower needs of the national economy and at integrating the education and economic plans into a coherent whole.

These examples, and others described and analyzed in the study, make this research in an outlying region of the Soviet Union an instrument which, the Institute hopes, may enrich the reflection and action of all who must rapidly and effectively respond to the growing demands of populations, often multilingual, and, for the most part, without incomplete or complete education.

The Institute expresses its gratitude to the team from Azerbaijan and in particular the study's co-ordinator, Mr. A. Atakishiev, for the quality of their work, which was carried ou. in close cooperation with Mr. R. Avakov, a staff member of the International Institute for Educational Planning.

Paris, November 1983

Sylvain Lourié
Director, IIEP

INTRODUCTION

Throughout the entire history of mankind its best representatives have always upheld the idea about the indissoluble connection of social progress with the development of public education. Historical experience convincingly proves the correctness of the assessment of the high place held by the problem of public education and its improvement in social life. Indeed, the initial attitude toward education is the profound conviction that the higher the culture and the greater the knowledge of a people, the requirements for them and the broader the opportunities to meet them, the more successful the development of a society, and economy and a country as a whole, the greater are the possibilities to combine personal and public interests.

Naturally, education is not an end in itself. Education is a vast enough sphere. It presupposes, above all, the gaining of knowledge based on the study of the surrounding world, a knowledge free from all and any manifestations of religiousness and mysticism.

At the same time, teaching the fundamentals of concrete knowledge largely resolves the problem of the moulding of personality.

The organization and essence of the process of education has an inevitable impact on the formation of the character in the student. The concrete historical situation, the sociopolitical, economic and cultural conditions in which the educational process is proceeding play a great role in this sphere. Education aimed at implanting the humanistic ideas of what is good and just, of freedom and equality, of the

historical inevitability of social progress and the elimination of social inequality, can be the only one to contribute to the forming of a harmoniously developed and progressive-minded individual.

Education is a dual process in which teaching and upbringing complement each other. The constantly rising level of public education is a natural law of social progress. The demands made on the education and culture of people stem from the tasks that society sets itself. Only a society paying unflagging attention to the all-round education of the popular masses has a reliable future. To ensure this, the necessary requisites for securing the high rates of the socio-economic and cultural development of a country and radical shifts in its social structure are being established.

This has been thoroughly corroborated by the experience of the Azerbaijan Soviet Socialist Republic.

Azerbaijan is a country with a rich and ancient history. Its territory was inhabited as far back as one-and-a-half or two million years ago. Azerbaijan's northern border passes along the Main Caucasian Mountain Range, and the southern border reaches the Kurdistan Mountain Range. In the east, Azerbaijan is washed by the Caspian Sea and in the west, it borders on Armenia and Georgia. Azerbaijan is situated in a temperate climatic zone, has fertile lands, many minerals and a rich and varied plant and animal life. All this had a favourable influence and largely contributed to the development of the economy and social and cultural life. The inhabitants of this ancient country had been waging a stubborn struggle for existence and gradually passed over to the tribal system, formed states and finally — an independent nationality.

From time immemorial, the Azerbaijanian people had been fighting the exploiters and foreign invaders unceasingly and had succeeded in creating a flourishing and unique material and spiritual culture.

Due to historical circumstances, Azerbaijan was divided into two parts — southern and northern — in the early 19th century. Since then its southern part has remained incorporated within Iran, while the people of Northern Azerbaijan connected their destiny with that of the Russians and other peoples that now make up the USSR. A historical consequence of Northern Azerbaijan having joined Russia

was the former's inclusion in progressive development; its working people joined the revolutionary struggle headed by the Russian working class, which was crowned in 1917 by the Great October Socialist Revolution. A result of its triumphant advance was the establishment of Soviet power in Azerbaijan and the formation of the Azerbaijan Soviet Socialist Republic on April 28, 1920.

Azerbaijan's area is 87,000 square kilometres and its population numbers more than six million. The republic's capital is Baku. Azerbaijan is a sovereign Soviet Socialist Republic and a member, along with the other 14 Soviet Socialist Republics, of a single union.

After the victory of Soviet power in Azerbaijan, the local working people, during a historically short period of just over 60 years, using the advantages of socialism and with great assistance rendered them by all the peoples of the Soviet Union, particularly the Russian people, have scored great achievements in socio-economic, political and cultural advancement. These results are all the more spectacular if they are compared to the initial lines from which the development of contemporary Azerbaijan and its educational system began.

The majority of the population of Azerbaijan had for ages been deprived of the opportunities for culture and had remained illiterate. A medieval conservative system of education had been prevalent for many centuries; children attended mektebes and madrassahs where tuition was in Arabic and Farsi. These religious schools only crippled children spiritually and morally and as the great Azerbaijanian humanist of the last century M. F. Akhundov put it "raised them mean and base".[1]

In the 19th century, especially during its latter half, and in the early 20th century, several hundred secular primary schools were opened, with tuition in Russian. As for secondary schools, they were few and far between. In the 1914-1915 scholastic year, only 73,000 children attended school.[2] Not more than 10 to 12 per cent of Azerbaijanian children could study at primary schools. There were neither pre-school nor higher educational institutions.

Although these educational establishments had played a definitely positive role in the development of education, they were attended mainly by children of the well-to-do

classes. Azerbaijanians accounted for only 23 per cent of secular school pupils. Schools were forbidden to teach in Azerbaijanian. It is not surprising that 90 per cent of the population was illiterate. The percentage of illiterate people in rural areas was even higher, 97 and among women, 99.

In 1913 there were 2,500 teachers and 291 doctors in Azerbaijan for a population of over two million[3]. Even in the most industrially developed region—Baku—the total number of engineers, technicians, chemical engineers, agronomists, mechanics, architects and land surveyors amounted to 432 only.[4] During the years of World War I and the civil war that followed, and intervention of foreign countries (1918-1920), the numbers of that small section of the intelligentsia had obviously diminished. National Azerbaijanian intellectuals accounted, however, for only a small part of the latter. In 1920, among people with a higher education in Azerbaijan only 62 persons were of Azerbaijanian origin.[5] There were practically no women among the local intelligentsia.

By 1920, only three specialized secondary educational institutions were functioning in Azerbaijan, with a very limited student body. The Baku University, created in 1919, had not yet developed its activity as it only had two departments. The limited number of people with a specialized education had acquired it at colleges and institutes outside the republic: in Moscow, Petrograd, Odessa, Kharkov, Tiflis as well as abroad.

After the establishment of Soviet power, Azerbaijan launched a vast programme of socialist construction, foreseeing a rapid rise in the socio-economic and cultural standards of the people. Azerbaijan had to be made a republic with a highly developed industry, while agriculture had to be transformed on the basis of new, socialist production shaping in the rural areas and a cultural revolution had to be implemented to accelerate the spiritual development of the people. These were the most essential elements of the programme. This was the essence of the revolutionary process of transformations and the creation of a new society based on the humane principles of social justice and equality.

The implementation of a programme of socialist restructuring of society in Azerbaijan (and in the young Soviet state as a whole) to include the creation of a system of

public education and the training of specialists based on the principles and ideals of the new society, was in itself an exceptionally complex task.

Firstly, the internal socio-political, economic and cultural conditions, as well as the foreign policy situation of the Soviet state were very complicated and contradictory. Azerbaijan was a leading region in the struggle against counter-revolution and foreign imperialist intervention for the new social system.

Secondly, the very goals and ensuing problems were new, there was no historical experience which could serve as an example or as the point of departure; neither were there methods and ways to solve these problems. Trial methods had to be used, much had to be experimented and boldness, creativeness and inspiration in searching for solutions had to be shown.

Azerbaijan, just as other national republics of the Soviet Union, was a laboratory, as it were, where new ideas and approaches to solutions of the education problem, as well as experiments in this sphere emerged and were tried. It was a testing ground where all new ideas were implemented.

Analyzing the experience of Soviet Azerbaijan in the development of public education, one can single out the following two stages of the work developed. This division into periods corresponds to the specific features of the republic's socialist development. It is also convenient for the purpose of investigation into these problems.

The *first stage* covers about four and a half decades, beginning with the establishment of Soviet power in Azerbaijan in 1920 and up to the mid-1960s. In turn, this stage can be divided *into two parts*: one takes up the first two decades of the republic's development, and the second—the years of the Great Patriotic War and the subsequent two decades. As for the *second stage*, it obviously covers the modern period which, according to this division into periods, begins in the mid-1960s.

What are the basic characteristics of these stages and parts in the development of public education in the Azerbaijan republic?

Inasmuch as education is closely connected to the general process of socio-economic and political development,

this process has determined the outlines of this division into periods. In other words, it is the division into periods of the history of the development of Soviet Azerbaijan and, in a broader sense, of the entire Soviet Union. At the same time, it takes into account the specific features of Azerbaijan's socio-economic advancement, including public education. Also a division into periods makes it easier to see the path followed, the questions arising from public education and the way they were solved, the problems that arose in the course of development and the evolution of the methods used, etc.

In a socio-political sense the *first part of the first stage* of the development of the Azerbaijan Soviet Socialist Republic was characterized by the move from feudal and pre-feudal relations to a new society built on the principles of socialism. This important strategy reached its aim at the end of the 1930s. From the point of view of economic development during that period, industry and agriculture had to be modernized on the basis of industrialisation and collectivization. Public education, being a vital component of socio-economic development, had to play a major role in this strategy.

In what state was the development of education in Azerbaijan during the period under review?

To begin with, there was no real educational system in the republic at the time. Consequently, the primary task was to mobilize all efforts for its creation. However, the main complication was not only that everything had to be virtually done from scratch. The idea was to set up a new system of education, a new type of school based on the national features of the Azerbaijanian people's culture and in accordance with the principles and ideals of socialism.

Parallel to this task, another one—no less important—had to be tackled, namely, to eradicate illiteracy in the republic. This was part of a universal campaign for the elimination of the population's illiteracy conducted all over the new Soviet state. However, it was necessary to take into account Azerbaijan's particular conditions: an especially high level of illiteracy; the absence of national teaching personnel, without whom it was impossible to implement the campaign, because this campaign, as in fact the entire education programme, had to be conducted in Azerbaijanian;

the opposition of feudal-religious groups, etc.

The training of national specialists for all spheres of socio-economic and cultural development was another major task of the period following the establishment of Soviet power in Azerbaijan. In other words, the aim was the formation of a national intelligentsia. It is well known that all societies need one. This is all the more so in a society which has chosen socialism as its ideal and aim.

The three tasks mentioned make up the elements of the cutural revolution which was the essence and aim of the entire activity in the sphere of providing education for the working masses of Soviet Azerbaijan.

During the *second part of the first stage* of the development of the Azerbaijan republic, essential changes occurred in the historical conditions in which the educational system of Azerbaijan developed. Accordingly, complex new tasks and problems arose from this.

On the one hand, the Azerbaijanian people, just as all the other peoples of the Soviet Union, were living in a great historical period—the building of the foundations of socialist society. The cultural revolution was almost complete and an educational system had been established which was already yielding results. All this formed a firm basis for the further advancement of the education and culture of the people.

In June 1941, fascist Germany treacherously attacked the Soviet Union. The Great Patriotic War against the Hitlerian obscurantists forced the Soviet people to revise radically the plans of socio-economic and cultural advancement, subordinating them to the aim of defeating fascism. The enormous losses suffered by the country, especially the heavy loss of human lives, could not but have a serious impact on the subsequent development of Soviet republics.

These factors determined the aims and tasks of the postwar period in all spheres of national endeavour, including the field of education.

The construction of the foundations of socialism in the Azerbaijan republic signified that it had by that time reached the general national level as far as the socio-political structure was concerned. This was why it could now set an aim: to build a society of developed socialism. To achieve

this aim it was necessary, first, to mobilize efforts for restoring the war-ravaged economy over a vast territory. Secondly, it was necessary to promote industrialization in every way, during which conditions and requisites for the development of the scientific and technological revolution could be created.

As for the educational system, it had not only to fulfil what the Hitlerian aggression had prevented, namely, to complete the elimination of illiteracy and ensure the renewal of national specialist personnel, whose numbers considerably diminished due to the hard war against fascist Germany. Another task was to complete the formation of a republican educational system with its original national traits, which was firmly connected, on a democratic basis, with the national system of education. This meant that the system had to enable the republic to fulfil a major task — universal and compulsory incomplete secondary education for the young people.

The specific features of the present *second stage* in the development of public education in Soviet Azerbaijan are determined by the fact that the questions concerning the quality of education have come to the fore, although the question of quantitative growth has not been forgotten. This shifting of emphasis can be explained by both socio-economic reasons and the requirements of the scientific and technological revolution which is playing an ever growing role in the development of socialist production. In fact, the creation of a mature socialist society is accompanied by the transfer of the republic's economy and that of the entire Soviet Union, for that matter, onto the road of intensive development. This cannot but tell on the character and aims of the educational system. In a nutshell, the second stage appears in the implementation of universal, compulsory, complete and general secondary education in all Soviet republics, including Azerbaijan. This is an important historical gain for the Azerbaijanian people and cannot be overemphasized. Indeed, it took only half a century to bring an illiterate, colonial outskirt of Russia to the position where all the young generation receives complete general secondary schooling.

The development of public education in Azerbaijan during the years of Soviet power is indisputable proof of the

successes scored in socialist construction by the republic under the guidance of the Communist Party. The educational system in the republic is the accomplishment of the ideals of the Great October Socialist Revolution; the contribution made by the system to the development of the economy, science and culture of primarily Soviet Azerbaijan, and of the USSR as a whole, justified the aims and hopes placed on it. In modern times, where society's development rate is largely determined by the results of scientific and technical progress and the implementation of scientific and technological achievements, the role of education and its functions become much greater.

The experience of the Azerbaijanian people in creating and developing the system of public education has had wide repercussions. There are several positive elements which could be of interest to the entire country as well as internationally.

Let it be sufficient to compare the point of departure for the great journey undertaken by Azerbaijan that went from a 100 per cent illiteracy and complete ignorance to a high level of education, to enlightenment with the same conditions prevailing as those in developing countries today, to see the similarity in the conditions and difficulties that are facing various peoples. Quite a few problems in the sphere of public education that had arisen before the people of Azerbaijan and were successfully tackled by them during the 1920s and 1930s, are now appearing in many young states. There are many problems of common interest. There are differences not so much in the problems of education that call for solution as in the methods of their solution. This is why exchanges of experience between countries and peoples in the development of education play a great role and can contribute to their mutual cultural enrichment. This was precisely the idea which guided the authors of this work when they accepted the offer of Unesco's International Institute for Education Planning to compile a book about the experience in the field of public education.

The authors of this work, proceeding from the fact that the International Institute for Educational Planning wants to make the experience accumulated by each country in this field common property, describe the experience of So-

viet Azerbaijan in the development of public education in all its aspects. They also want to show how the republic blazed a trail in its educational progress, what solutions it chose and what obstacles it had to surmount.

This publication is designed for foreign readers. It deals with the principal development trends of public education in Azerbaijan during the years of Soveit power. Taking into account the fact that the foreign reader, as a rule, is not familiar with the history of public education in Azerbaijan, the authors dwelt in detail on some of its aspects. At the same time, the work concentrates on describing the difficult problems that occurred during the development of public education in Azerbaijan at various times and the methods and means by which they have been solved or removed. The authors wished to show how real requisites for converting to the higher requirements of the epoch had emerged and how the steady progress of public education in the republic was ensured.

The authors hope that the material they offer can form a basis for deliberation and an exchange of views. The authors will consider their task fulfilled if this experience finds response in other countries — among people responsible for the planning of education and all those showing concern for the culture of the peoples.

[1] M.F. Akhundov, *Selected Philosophical Works*, Baku, 1953, p. 73. All references are in Russian except those indicated otherwise.

[2] *Public Education, Science and Culture in the USSR*, Moscow, 1977, p. 49.

[3] Central State Archives of the October Revolution of the Azerbaijan SSR.

[4] Ibid.

[5] *The 1st Azerbaijan Congress of Soviets*, Verbatim record, Baku, 1922, p. 117.

Part I

FORMATION OF THE PUBLIC EDUCATIONAL SYSTEM AND THE TRAINING OF PERSONNEL IN SOVIET AZERBAIJAN

Chapter I

EMERGENCE OF A NEW TYPE OF SCHOOL SYSTEM — ELIMINATION OF ILLITERACY

As we have already seen, before the revolution, Azerbaijan had practically no national system of education. The very fact that there were no schools teaching in the native, Azerbaijanian language was eloquent enough. As for the several dozen schools for children of the local élite, with tuition in Arabic and Farsi, they could not, naturally, provide the foundation for organizing a school system in Soviet Azerbaijan, which proclaimed new ideals, principles and aims of development. Having broken with the old society, the republic also had to abandon the old, medieval élitist school. There was no other way. The new socio-political structure needed a new model of education.

V. I. Lenin, the founder of the Soviet state, emphasized that along with the transformation of the old society "the upbringing, training and education of the new generations ... cannot be conducted on the old lines".[1]

The very idea of the need to break with the past, as far as the principles and aims of education, just as the methods of teaching were concerned, was evident and simple enough. The crux of the matter was what model to choose, and what was more important, how to build it in the socio-economic and cultural conditions of Azerbaijan, whose population was completely illiterate and which had no national personnel at all. This chapter deals with the way these tasks were being tackled in the republic, the development of public education, the fight with illiteracy, and future prospects for education.

(a) Socio-economic backwardness and the formation of a public educational system

The system of education which had to be set up in Soviet Azerbaijan would be called upon to take an active part in the republic's socialist development and advance in accordance with its fundamental orientations. This strategy was aimed at breaking the backward economic structure, especially in the rural areas.

Despite rich natural resources, especially in oil, the economic development rate of Azerbaijan was very low. The republic had inherited a one-sided structure of the economy. Oil riches did not only serve development aims, but emphasized the contrast between enormous possibilities and extreme backwardness. The oil extracted from Azerbaijanian soil was exported by foreign capitalists at a very high profit. This led to the formation, in pre-revolutionary Azerbaijan, and especially in the Baku oil region, of the working class which subsequently became a leading detachment of the Russian proletariat.

Baku was the biggest industrial centre in the Caucasus at the time. In 1913, the Baku oilfields accounted for 83.1 per cent of the entire output of oil and gas in Russia. Dozens of oil refineries, engineering and other plants, electric power stations, tobacco, textile and other factories were located there. Foreign capital held all key posts in the oil industry. The numbers of the Baku proletariat reached 100,000. 76 per cent of the population worked in agriculture. The entire land fund was in the hands of the state treasury and landowners. In 1917 the former claimed 68.6 per cent of all arable land, landowners, churches and mosques—29.6 per cent, and peasants—only 1.8 per cent. Agriculture was very primitive. Tzarism and the Russian bourgeoisie, using Azerbaijan as a market for the goods produced by Russian industry and a source of cheap raw materials, retarded the development of the productive forces and preserved feudal relations there.

During the Civil War and foreign intervention, Azerbaijan's economy was in a state of crisis and ruin. In 1920, the output of large-scale industry dropped to one-seventh and that of agriculture by 35 per cent, as compared with the prewar level. The output of oil was 30 per cent of its

prewar level. Only 18 oil refineries out of 40 were operating, with frequent interruptions. Oil refining in the 1920-1921 economic year was only 41 per cent of what it had been before the war. Labour productivity in 1920-1921 dropped to less than one-sixth in drilling and to eighty per cent in oil mining, as compared with 1913.

A serious drop was also registered in other branches of industry. Copper smelting and cement plants were closed. Salt mining reached only 52 per cent of the prewar level. Out of 46 cotton-spinning plants, only two were working.

The picture of rural life in Azerbaijan, prior to the establishment of Soviet power, was especially gloomy. Cultivated arable land dropped by 32 per cent as against the 1918 figure. Livestock decreased by 30 per cent compared with 1916.

These figures show the backwardness of Azerbaijan and the one-sided character and contradictions of its economic development in the first years of Soviet power. This study does not aim at giving a thorough analysis of the state of the republic's economy in that period. The authors wanted to dwell briefly on the economic conditions under which the drive began for the creation of a national educational system in Azerbaijan. On the other hand, this general background is necessary for the reader to better understand the aims of education in the republic, as well as the means and prospects of its development.

(b) Basic principles and aims of the new educational system in Azerbaijan

From the very first days of the establishment of Soviet power in Azerbaijan, the problem of education took pride of place in its socio-political and cultural life. Not a single revolutionary leader, scientist or teacher had any doubts as to the need to create a new school in the republic which would differ from the old one by its general socio-political essence and character, by its scientific-theoretical and pedagogical principles and social aims. Expressing this view and the general trend prevailing at the time, the outstanding state and public figure and head of the government of Soviet Azerbaijan, N. Narimanov, emphasized in his speech at the Azerbaijan Congress of educational workers in

September 1920, several months after the proclamation of the republic of Azerbaijan, that "with the establishment of Soviet power the school and the methods of teaching and upbringing should be renovated"[2].

What then were the principles and aims of the school system being set up in Soviet Azerbaijan?

A genuinely democratic solution of educational problems meant, first of all, the overcoming of difficulties connected with the drawing of the indigenous population —Azerbaijanians — to education. Their education level was much lower than that of other big national groups living in Azerbaijan. A large part of the Azerbaijanian population was under the influence of religious dogmas and prejudiced against secular education. This had particular impact on the education of Azerbaijanian women who were deprived of the opportunity to study.

These difficulties and historical conditions which were briefly outlined in the previous section, determined the primary aims of public education at the first stage of its organization and development. It was necessary, first of all, to set up a system of education such that it would provide schooling for all children, especially in the context of the 100 per cent illiteracy of the Azerbaijanian population. The new Soviet socialist school proclaimed its main character to be the principle of establishing public education for the masses. It set itself a major task: to eliminate forever the renewal of an illiterate population from among the growing generation. In other words, not a single boy or girl should join the ranks of the illiterate. This principle of education for the masses became an efficient guarantee for a constant rise in the educational level of the population.

The slogan "School desk for each child! " was implemented step by step, along with the construction of the material and technical basis for the school and the training of teaching personnel. During that period, it had the aim of introducing universal, compulsory, primary education.

Education for the masses also covered the secondary schools, although less extensively at this time. In those years the number of children getting incomplete or complete secondary education was growing rapidly, however, not all those wishing to receive it could attend school. This is why it was of primary importance to give priority of en-

trance to elementary and secondary schools to children from the poorer sections of the population.

This circumstance had to be taken into account when the principle of equality for education was introduced, for it complemented and increased its mass character. At a time when elementary education had not yet become compulsory and secondary schooling, although becoming more available to the masses with every passing year, had comparatively little opportunities, it was important to make sure that equality of rights do not turn against the families of workers and peasants who were not then able to provide a high general educational and cultural background for their children. The principle of equality was not an abstract notion, and introducing it the new authorities could not ignore the fact. This principle had to ensure access to education to all those who had been deprived of that right in the past. Such was the class approach to solving this problem.

Defending the democratic principles of public education, the newspaper *Kommunist*, the mouthpiece of the Communist Party of Azerbaijan, wrote: "From now on every child born on our soil can be sure that he will not be thrown out into the street... The rights of the children in this country of workers and peasants should be fully protected; we mean by that the right to life and the right to education. Soviet power has proclaimed universal education a 'duty', and the doors of all schools — from primary to university and academy—are thrown wide open for the children of the revolutionary people."[3]

Equal rights and mass education would remain empty words, a general declaration devoid of any practical significance, had not another principal trend of the new school of thought been fulfilled, namely, the introduction of teaching in the native language. From the very first days of its existence, Soviet Azerbaijan shaped its education policy from precisely this pedagogical fact: the granting to the native people that comprised the overwhelming part of the republic's population, the right and true opportunity to study in their native, Azerbaijanian language. Naturally, this was an enormously difficult task, inasmuch as there was neither teaching personnel nor curricula, nor textbooks. But only with tuition in the native language was it possible

to guarantee success in reaching the ultimate goal—to offer education to all on the basis of equal rights and opportunities. This pedagogical requirement was beyond the framework of pure teaching, acquiring primary social and political importance.

It should be emphasized that the question concerning the creation of a national school with tuition in Azerbaijanian was a matter for heated debates at the time. Certain groups of educational workers did not believe in the possibility of carrying out this task rapidly. They referred to specific difficulties, such as a shortage of teachers speaking Azerbaijanian, the lack of textbooks in the native language, obstacles that would deter Azerbaijanian children, especially girls, from studying, resistance on the part of backward and religious elements, etc.

In the course of discussions, various and sometimes contradictory views were voiced. Some suggested abandoning, for a time at least, the project of secondary schooling in Azerbaijanian, deeming it expedient and recommended keeping to the primary school only. Others supported the idea about the organisation of a national school with tuition in the native language in all grades, including higher education. Still others advocated the creation of Russian schools everywhere.

V. I. Lenin criticised the advocates of the russification of schools in the USSR. Of course, he fully appreciated the role and significance of Russian for the non-Russian peoples of the country as a means of communication between nations and drawing to advanced Russian and world culture. However, Lenin emphasized another aspect: unacceptability of the arbitrary forcing on some peoples of the language of another people, even if the latter was the Russian people who commanded their great respect. Besides, Lenin suggested another idea, namely, that the native language is a most effective means of overcoming illiteracy and attaining a high educational and cultural level. Lenin regarded the language problem as a part of the nationalities question and maintained that it should be tackled with tact and caution, without arbitrariness and compulsion, and that only persuasion or voluntary agreement should be allowed.

Following this concept of Lenin's, the people in charge of education in Soviet Azerbaijan insisted that the Azerbaija-

nian language be recognized as the basis for creating the republic's national education. In keeping with the Decree on the Elimination of Illiteracy Among the Population of the RSFSR*, signed by Lenin in 1919, on May 10, 1920, that is to say in less than two weeks after the proclamation of Soviet Azerbaijan, the People's Commissariat of Public Education issued a decree on the setting up of a new school in which "...tuition is to be conducted in the native language and boys and girls will study together.... School will become not only accessible, but compulsory. With a view to providing the access to knowledge for the working people, attendance in all schools of the Azerbaijan Soviet Socialist Republic will be free..."[4]

Free education created the economic basis for attaining a major goal: making education an institution that genuinely caters for the masses so that the children of the poor sections of the population have the opportunity of attending school. This was necessary to make the principle of equality in the sphere of education a concrete, political achievement.

The proclamation of the principle of education in the native language was a most vital example of implementing the new character and essence of national policy in education and provided free access to school for all, irrespective of national affiliation. The dream of progressive-minded figures of Azerbaijanian culture—the organization of schooling in their native language—had come true. Favourable conditions were thus created for a renaissance of national culture and the development of the native language and literature. Having acquired access to studying in the native language, Azerbaijanian boys and girls were now able to use all the cultural values of their people.

The principle of teaching in the native language was not restricted to Azerbaijanian children only. Azerbaijan is a multinational republic inhabited by Russians, Armenians, Georgians, Lezghians and other nationalities. Children of all peoples living in Azerbaijan had the opportunity of attending school that taught in their respective native languages. The curricula of these schools included the teaching of Russian—a necessary means for inter-republi-

* Russian Soviet Federative Socialist Republic.

can communication and the Azerbaijanian language, as a means of intra-republican communication. Foreign languages were not, however, forgotten.

Whilst speaking about the solution to the problem of the language used to teach, an important point should be emphasized. The inclusion of the Russian language in the curricula of non-Russian schools in Azerbaijan, and in other republics for that matter, did not signify its introduction as the state language. Lenin's concept excluded the idea of a single state language for the entire Soviet Union. This is reflected in Soviet policy in the sphere of education, stressing the profound democracy of Lenin's course which placed all the peoples of the Soviet Union on an equal footing. Language becomes an instrument for the democratization of education, and the development of national culture as well as a means of contact between peoples only when it is not enforced by the state, but exists as a cultural and pedagogical subject that appeals and is an instrument for acquiring more knowledge of one another, mutual cultural and spiritual enrichment and the establishment of good-neighbourly relations between peoples. It is such an approach that could ensure, and ensure it did, the role of the Russian language which it is now playing in the life of all Soviet socialist republics.

The mass character of the education programme, equal rights and teaching in the native language applied to all, irrespective of nationality, sex, age, etc. Another principal question for the educational system in the republic was the question of what to teach and how. The answer was provided by the concept of the labour polytechnical school, separated from the church and religious education.

Already in May 1920 the Soviet government of Azerbaijan, by a special decree of the People's Commissariat of Public Education barred clergymen from working in schools and their administrative offices. Prayers were abolished in schools. These historic acts freed the Azerbaijanian people from the strong influence of the Moslem clergy in schools.[5] The decree said that there would be co-education in new schools "wherever possible". The school thereby became an important field of struggle for the emancipation of the Azerbaijanian woman from the shackles of religion.

However, this principle was put into effect very cau-

tiously, inasmuch as the Azerbaijanian population, strongly influenced by Moslem dogmas, especially in rural areas, regarded school education for girls, all the more so co-education, as something unnatural and even immoral. In view of this, the People's Commissariat of Public Education issued special Regulations on Co-education in Schools, which said, among other things: "Educational institutions and groups for Azerbaijanians continue, temporarily, to have separate schooling for boys and girls. At the same time, propaganda on co-education is being conducted in the press and among Moslems in mosques and at public meetings. As its necessity and usefulness becomes evident to Moslem society, it will gradually be introduced in Azerbaijanian schools."[6]

The separation of school and religion was a necessary step to making education polytechnic, and for combining education and efficient social labour. Theoretically, the Azerbaijanian schools could assume the concepts of the labour polytechnical school elaborated by the classics of Marxism-Leninism incorporated in the Programme of the Communist Party adopted at its 8th Congress in 1919.

This work lays no claim to discuss thoroughly the Soviet concept of the labour and polytechnical school, and its fundamental principle which is the combination of education with socially efficient labour, primarily productive labour. However, in order to better understand the ways in which the Azerbaijanian school was developed, its principal trends and aims, we should dwell, if only briefly, on some basic aspects of this concept.

The Marxist-Leninist theories are that the form and ingredients of an educational policy are closely connected with social relations and revolutionary changes in production and, consequently, with the social division of labour. The industrial revolution of the 19th century, while destroying the former feudal organization of production required a greater mobility in the productive functions of a worker. The need arose to introduce radical changes in education and in special training, without which it was impossible to cope with the new conditions of production. In other words, there exists the need to adapt oneself continuously to the new, ever-growing requirements of production. This question becomes of vital significance for

the working class from the point of view of its functioning as a body, as well as for its struggle towards a new society based on socialist production relations.

In the search for a new type of education for the future, the Marxist-Leninist theories were that polytechnical education was the best one for socialist society and production, planned on a nationwide basis. It is precisely this type of education and training that can ensure proper general educational and technical level of the working people, enable them to join efficiently social production and take a worthy place in it. Defining the essence of polytechnical education, Marxist-Leninist philosophy emphasizes two of its aspects:

(a) teaching students the scientific fundamentals of the entire production process, i.e., theoretical knowledge;

(b) familiarizing students with the use of simple machine tools used in the production process, i.e., practical knowledge.

How should these two principles be implemented?

Separated from labour, education is unable to cope with this task. Only in combination with a well-thought-out system of labour education can it produce a "polytechnical effect", so to speak. It should be emphasized that labour should play a dual role in the educational process: to inculcate labour habits in the student and to bring up him or her as a worthy member of society—something that can be expressed by the concise formula "education by labour". Labour in schools should not be regarded as a means of payment for education as it is sometimes suggested. Of course, there can be exceptions, when results of the pupils' labour can be used to replenish the school budget. But it would be an error of principle to suggest that a pupil's work fully compensates for the incurred expenses for his or her studies.

Lenin warned that one should not mix the principles of polytechnical education with that of specialization. Polytechnical education is not aimed at giving the student any definite specialization. The leader of the Soviet state emphasized the fact that specialization at a too early age was inadmissible. Another point of principal importance stressed by Lenin was that the introduction of labour in school curricula should not lead to undesirable consequences: lower

teaching standards. Lenin considered that general theoretical subjects should take pride of place not only in the general, but also in vocational, schools.

From the very first days of its existence, Sovet Azerbaijan tackled the problem of school education from precisely this angle. To organize such polytechnical schools was an extremely complex matter, especially in the conditions then prevailing in the young Azerbaijan republic. But it could not be postponed. The task was, as Lenin pointed out, not only to accept the principle of polytechnical education, but to put it into practice immediately. This was why the above-mentioned decree of the People's Commissariat of Public Education said that "from now on the archaic type of school, both secondary and primary, will be replaced by a polytechnical school ..."[7] After the establishment of Soviet power in Azerbaijan, the republic directed its efforts toward the creation of the labour polytechnical school whose task was to orient properly the younger generation towards the building of a new life on a socialist footing, contribute to the maturing of the individual and his creative abilities and prepare the young people for work and life.

(c) First steps towards national education: obstacles, problems, solutions

The main principles of the setting up of a new, Soviet-type of school formed a firm, scientific-theoretical and ideological base for educational policy in all Soviet republics, Azerbaijan included. The problem was to find, taking into account local conditions, concrete ways, methods and forms for the practical implementation of these principles. It was here that obstacles and difficulties arose.

It was necessary, first of all, to solve organizational problems—to set up a body responsible for the realization of educational policy. This body—the People's Commissariat of Public Education—was organized immediately after the proclamation of Soviet power in Azerbaijan. Simultaneously, departments of public education were set up under the local Soviet administration. The People's Commissariat of Public Education and its local bodies employed the progressive-

minded teachers and other enthusiasts wishing to make their contribution to this field. For this task, these local bodies of the young Azerbaijan republic relied on the progressive experience of local educational workers and on classical Russian and Azerbaijanian democratic pedagogical thought.

The first steps undertaken by these bodies in Azerbaijan were largely facilitated by the assistance they got from the People's Commissariat of Public Education of the RSFSR which had by then accumulated a certain experience. A special mention should be made of the important role played by the national minorities department which was created in the People's Commissariat of Public Education of the RSFSR in the first years following the October Revolution. Questions of education were also the centre of attention of another important body—the People's Commissariat for Nationalities, where a special cultural and educational commission actively worked from May 1918.

The use of Soviet Russia's experience helped to evolve, within a very short space of time, a democratic legislation for the organization and functioning of public education in Azerbaijan, particularly the first school legislative acts laying down the concept of the school system, types of schools, lengths of study and the concrete tasks and aims of school education. The experience of Soviet Russia could not be used in full, for the republic's conditions, both economic and cultural, differed substantially from those of Soviet Russia. These differences had to be, and were, taken into account in preparing legislative acts.

Take, for instance, the length of the studies. In Azerbaijan it was five years for primary school, whereas in the RSFSR it was four years. The reason was the complexity of the Azerbaijanian written language and the lack of textbooks in the native language. Also, due to various reasons the network of secondary schools during the first years of Soviet power was growing slowly and the majority of children had to make do with primary education. This was why it was only natural to try and give the primary school pupils as much knowledge as possible.

An interesting and important document in which the fundamental principles of the Soviet school were combined with the national traits and particular conditions of the

development of public education in Azerbaijan, was the Statute of the Single Labour School of the Azerbaijan Soviet Socialist Republic endorsed by the People's Commissariat of Public Education on May 26, 1920.[8]

This document covered the entire scope of school work. It defined the school system, the age of pupils for primary and secondary school, the compulsory and free character of schooling, the work of the teachers, the rates and payment for it, the language of tuition, the secular nature of teaching, equality for all nationalities living in Azerbaijan, etc. The first degree of schooling was for children aged 8 to 13 and lasted five years (primary school); the second was for adolescents and young people aged 13 to 17 and lasting four years (secondary school).

Organizational problems were tackled quite rapidly, although there were difficulties, especially with regard to personnel. However, it was clear that the solutions to the tasks of organizing schools and the teaching of hundreds of thousands of children depended not so much on correct, scientifically substantiated decrees and other documents, as on a technically solid material base and qualified teachers.

Indeed, Soviet Azerbaijan had inherited a very poor "educational" situation: dilapidated school buildings, no windowpanes, no furniture, no textbooks or teaching aids. As for the teachers, who had been poorly trained, they were unable to cope with the tasks proposed by the new school. Besides, the reactionary-minded element of the teachers resisted the implementation of the decrees and rules of the new administration.

How could the new schools be staffed under such conditions?

There were two possibilities. Firstly, to use the knowledge and experience of democratically-minded teachers of the old schools who showed a sincere desire to cooperate with Soviet power. There were few such teachers but they could not be ignored. The People's Commissariat of Public Education in its special address to older progressive-minded teachers called on them, as well as on cultural workers and all who could help in the education of the popular masses, to join the efforts aimed at organizing and improving public education. Conferences between teachers and cultural workers were being held in Baku and regional centres to

discuss and explain the tasks and aims facing Soviet Azerbaijan in the field of education. On September 28, 1920 a decree of the Azerbaijanian government was published On Mobilizing Educational Workers, which said, among other things: "In view of the proposed introduction of universal schooling in Azerbaijan and the amount of work involved, all educational workers without exception are considered mobilized and are to remain at the disposal of the People's Commissariat of Public Education."[9]

Secondly, to start immediately teachers' training. In nine regional centres, short-term teachers' courses for primary schools were opened. For a radical and rapid solution to the problem of training young teachers for primary schools, two teachers' seminaries (Baku and Kazakh) were reorganized, three female teacher-training seminaries (in Baku, Sheki and Gyanja) and three male teacher-training seminaries (in Sheki, Shusha and Shemakha) were opened. In 1921, the first teachers' institute in Azerbaijanian was opened in Baku. Teachers were being trained both at institutes and colleges on six and twelve month courses. These measures gave positive results. The number of teachers in primary schools reached 2,621 in the 1920-1921 scholastic year, whereas in 1926-1927 the figure was 5,467, and in 1930-1931—8,014.[10] The number of teachers in secondary schools was also growing thanks to more and more people graduating from the teachers' seminaries and institutes.

As well as this, regular summer teachers' courses for upgrading the teaching staff at schools were opened. Special conferences discussing teaching methods were convened and pedagogical literature began to be published.

As for the technical and material facilities, the government of Soviet Azerbaijan had to mobilize the limited resources at its disposal for this purpose. By special decree, it adopted the decision to satisfy the requirements of the People's Commissariat of Public Education without delay by granting them priority. The decree of April 14, 1921 said: "The activity of the People's Commissariat of Public Education of the Azerbaijan republic should be accelerated for a more consistent and efficient implementation of its principles and plans; to consider it a rule that all requests and orders of the People's Commissariat of Public Education should be satisfied by state bodies as a priority."[11]

The government of the young Azerbaijan republic did not have many means at its disposal in order to develop the system of public education on a high scale. To fully understand the way this problem was being solved, one should also consider the entire scope of the revolutionary socio-economic and political transformations going on in Azerbaijan, and in the entire country for that matter. Of major significance was the nationalization of industry, transport and banks and the large-scale expropriation of the property of exploiting classes. This enormous economic, political and social campaign resulted in the transfer of a considerable amount of property belonging to former industrialists, bankers and landowners into the hands of the proletarian state. Having now the bulk of the national wealth, the government of the republic had the means to finance the training of qualified specialists. It became possible to use many buildings, libraries and equipment that had formerly belonged to private individuals, for the needs of public education.

These measures made it possible, both in Azerbaijan and in Soviet Russia, to do away at once with private initiative in the organization of the entire system of general schools and special education and to finance the development of educational institutions in the republic using state funds. The proportion of allocations and means from the state budget for the needs of education was systematically increased. By 1923, it had reached 35 per cent. By government decree, all school buildings occupied by other departments were to be returned to the People's Commissariat of Public Education to be used for their real purpose. The construction of school buildings increased from year to year, especially in rural areas, and the material basis of the schools strengthened. During the 1921-1924 period, school-aid weeks were held regularly.

There were so many difficulties and so little resources that some people expressed scepticism about the possibility of achieving positive results within a short space of time. Countering this scepticism the People's Commissar of Public Education, D. Buniyatzade wrote: "No doubt the organization of education and upbringing is very poor at present ... But we do not despair and do not consider our efforts hopeless, as some people believe. We realize that a

school cannot be organized with only the aid of fantastic ideas and projects and within a period of one or two years only. We are convinced that our young school, in two or three years time, will make headway and will lead the uneducated population of Azerbaijan to a bright future."[12]

Seen today, these measures of Soviet power in Azerbaijan may seem very modest. But in the years when Soviet Azerbaijan was beginning its development, the implementation of these measures was already a great stride forward, which demanded large efforts. As a result of a persistent activity, many difficulties were overcome and positive changes were effected in the development of school education. It is significant that on October 1, 1920, five months after the proclamation of Soviet power in Azerbaijan, the first scholastic year began throughout the republic.

However, the greatest difficulties were perhaps connected with the organization of schools teaching in the Azerbaijanian language and the enrolling of children of the Azerbaijanian working people, especially girls. We have already mentioned the influence of backward traditions and religious dogmas. To overcome this influence, painstaking efforts were necessary for more than just one year.

Let us take as an important aspect of the problem that of equality in the enrolling of Azerbaijanian giris into the school system.

In Azerbaijan, just as in other Soviet Eastern republics, the decisive alterations in the development of public education were impossible without a solution to the problem of women's emancipation, the recognition of their right to take an active part in social affairs, their right to freedom in life, their right to work and to be educated. A change in the consciousness of women themselves was also necessary; they had to realize their unequal position in society, and their lack of rights and strive to put an end to this situation.

It was impossible to act hastily in this matter, to use arbitrary measures. Undoubtedly, a state policy aimed at the emancipation of women, pursued under government pressure, would create misunderstanding and protest on the part of the population which could be used to profit by the reactionary, conservative forces. That was why it was necessary to work for the drawing of Azerbaijanian women into an active social life in order to emancipate them. Only on

that basis was it possible to effect the transition from legal to real equality with men.

A special role in the emancipation of women in Azerbaijan was played by public organizations—women's clubs formed by progressive-minded women of the republic with government support. The main aim of these organizations was to draw Azerbaijanian women into public and industrial activities. General education and specialization courses, schools, artisanal and other workshops, music and drama groups were organized at the clubs, where thousands of Azerbaijanian women acquired theoretical and practical knowledge. By the mid-1920s, the number of women engaged in mass cultural and educational work had exceeded 47,000. By the early 1930s there were almost 40 women's clubs in the republic. The central club named after A. Bairamov involved in its activities 150,000 women.

The activities of these clubs, women's participation in industry, a rise in their educational and cultural level—all this enhanced their social consciousness and broadened their outlook. Consequently, by the end of the 1920s, beginning of the 1930s, when the struggle of the social forces for the emancipation of women had greatly increased in the republic, women themselves took an active part in that movement.

A positive result of this was a mass campaign by the women for removing the yashmak, which began in 1929. In that year alone 270,000 Azerbaijanian women did away with the yashmak for good. No force could now stem the large movement for the emancipation of Azerbaijanian women. When in 1930, the reactionary forces and Moslem fanatics murdered a woman who had removed the yashmak and gone to work in a factory, hundreds of thousands more women removed their veils as a sign of protest, thereby publicly declaring their desire to become fully fledged members of society. The process of the emancipation of Azerbaijanian women became irreversible. This was the decisive factor in the active drawing of Azerbaijanian women into the sphere of education.

Hostile elements in rural areas, opposing Soviet power and exploiting the religious sentiments of the backward members of peasants, asserted that those who sent their daughters to school committed a mortal sin and betrayed

Islam which demands women's seclusion. This was one of the main reasons why out of 10 pupils in any Azerbaijanian school there were only three girls in the late 1920s. This was why, along with great explanatory work among the population, administrative measures had to be applied. In November 1930, the Central Executive Committee and the Council of People's Commissars of the Azerbaijan republic adopted a decree Responsibility for Refusal to Send Children to School in Accordance with Universal Compulsory Primary Education in the Azerbaijan Republic. It envisaged administrative punishment, as well as fines and forced labour, for refusal to send children to school.

Simultaneously, measures of a pedagogical nature were adopted: the elaboration of curricula and textbooks in the Azerbaijanian language and improvement in the structure and methods of teaching and other school work. As a result, by 1923 new curricula and plans of school work were issued.

These plans and curricula were formulated to show in a clear-cut manner the tasks of the school in the process of teaching and upbringing. The tasks of primary schools were laid out in an introduction to the curricula and were "to give pupils general knowledge and training; the habit of speaking, reading and writing fluently in the native language, a basic knowledge of music, drawing, mathematics and also elementary working habits... a knowledge of social sciences and the country's history and geography", to train "healthy, industrious people respecting their like and capable of taking their place in society armed with the ideals of the working class."[13]

These tasks, the introduction continued, are implemented during the entire school span and, in the teaching of all subjects. The curriculum envisaged that each school should maintain contacts with other schools, with daily life, with industry, "for such contacts would have a beneficial, educational influence on schoolchildren".[14] Curricula for each subject composed a range of systematized knowledge connected with concrete tasks in education and upbringing. For example, the aim of teaching physics in secondary school, as formulated in an explanatory note on the curriculum, is to give pupils systematic knowledge of the subject, and also to contribute to a harmonious development of the character and widen their horizons, to help evolve a scien-

tific outlook of the world and an awareness of their surroundings, develop creative initiative, acquire the necessary practical knowledge and foster ability and love for independent work.[15]

School curricula devoted much attention to teaching languages: the native language, Russian and foreign. An important place was given in the curriculum to literature.

Special attention was paid to vocational education. The school itself was called labour (vocational) school. A special directive of the People's Commissariat of Public Education said: "The principal distinction of vocational school from a purely educational one is that the former strives to avoid the separation of thought from action, to combine teaching with production processes, beginning with the teaching of working methods culminating with the application of acquired knowledge in agriculture, industry, handicrafts, household economy, etc."[16] Of course, at this time the implementation of vocational education in many schools did not correspond to its theoretical conception due to the lack of specialized teachers and an insufficient material basis and contacts with industry.

The improvement and implementation of curricula and plans was not a one-time effort, but a continuous process which was maintained in subsequent years. This work made it possible to adopt and publish a new curricula for primary and secondary schools in 1926. In the primary schools, the number of lessons given in the native language per week was increased. Russian was introduced after the third year. The curriculum of the secondary school excluded some subjects that were not appropriate to it—psychology and geology—but the number of lessons of the native language a week was increased, as was the number of Russian lessons.

The transfer of the Azerbaijanian written language from the Arabic alphabet to the Latin alphabet played a great role in developing education, combatting illiteracy and establishing a new national culture. The Arabic alphabet, being, along with others, a definite achievement in world civilization, did not, however, correspond to the particular phonetical and grammatical features of the Azerbaijanian language.

In view of this, the idea emerged in the 19th century,

among the progressive-minded, democratic public of Azerbaijan, concerning the need to hurry the transfer from the Arabic to the Latin alphabet. The outstanding Azerbaijanian reformer and literary scholar of the last century, M. F. Akhundov, was one of the first advocates of this transfer, emphasizing that the Arabic alphabet was a serious obstacle for the elimination of the population's illiteracy. M. F. Akhundov not only worked out a draft reform of the old alphabet, but also compiled a new one based on the Russian and Latin alphabets. This idea was supported, even before the October Revolution, by the outstanding representatives of Azerbaijanian culture, J. Mamedkulizade, F. Kocharli and N. Narimanov. By the time socialist construction started the greater part of the intelligentsia also voiced their support of it. It should be noted that the negative attitude towards the old alphabet reflected the feelings of the progressive-minded public about the abnormal system of education in pre-revolutionary schools.

Immediately following the victory of Soviet power, distinguished representatives of the progressive-minded public raised the question of a reform of the written language. For this purpose, a Permanent Committee on the New Turkic Alphabet was organized in 1922 which took charge of the Latinization of the written language in Azerbaijan and carried out a great deal of work in this field.

On July 21, 1922 the first government document on the new alphabet was published. It instructed all offices and institutions to familiarize their employees with the new alphabet and to accept correspondence using this method.

On October 20, 1923 a decree of the Azerbaijan Central Executive Committee recognized the new alphabet as being on a par with the Arabic alphabet. By a decree issued on June 20, 1924, the new alphabet was recognized as being the official and compulsory state alphabet.

Transfer to the Latin alphabet was considered by state and public bodies as a primary condition for speeding up the elimination of illiteracy in the republic. That was why, despite a great shortage of means for the acceleration of the entire range of social and economic transformations, the government of the republic provided financial aid for the reform of the written language. The Government of the USSR gave a great deal of valuable assistance to the Azer-

baijan republic in this respect.

On October 2, 1922, the Presidium of the All-Union Central Executive Committee, having discussed the question of the transfer of the Azerbaijanian written language to the Latinized alphabet, decreed that: "Recognizing the necessity to give assistance to the Azerbaijan Central Executive Committee for the conversion of the Moslem written language into Latin, the Smaller Council of People's Commissars was to examine, within three days, the question of allocating the necessary funds to the Azerbaijan Central Executive Committee for this purpose and to urgently submit the matter to the Presidium of the All-Union Central Executive Committee". On October 6, 1922, the decision was made to grant the funds.[17]

Work got underway in the republic for transferring to the new written language.

In the summer of 1924, courses for the training of teachers in the new alphabet were opened in Azerbaijan. These courses were organized both in cities and in rural regional centres. Following this, groups for eliminating illiteracy using the new alphabet were set up. At first, 1,320 such groups were created in Azerbaijan.[18] Along with them, special schools for training printshop workers and courses for typists were opened.

Branches of the Committee on the New Turkic Alphabet were organized in various regions of the republic.

On February 26, 1926, the First All-Russia Turkological Congress opened in Baku. It played a great role in propagating the idea of the Latin alphabet and was a marked cultural event in the life of the Turkish inhabitants of the USSR.

A great deal of organizational and propaganda work paved the way for the final transfer to the Latin alphabet. On July 21, 1928 a decree by the Central Executive Committee and the Council of People's Commissars of the Azerbaijan republic was published, The Compulsory Introduction of the New Turkic Alphabet in Azerbaijan. In October 1928 a session of the Azerbaijan Central Executive Committee endorsed that decree.

From January 1, 1929 onwards, the Azerbaijan republic was to use the new Latin alphabet. Addressing the working people of the republic on this occasion, the Central Committee and the Baku Committee of the Azerbaijan

Communist Party emphasized that the introduction of the new alphabet would considerably facilitate the work aimed at eliminating illiteracy[19]. This was an event of enormous significance in implementing the cultural revolution in Azerbaijan. Lenin called the movement for the new alphabet "a great revolution in the East".

A major result of the introduction of the new alphabet was the opportunity to lure the working masses to education more rapidly, and this played an outstanding role in the elimination of illiteracy and the introduction of universal schooling.

The working people of Azerbaijan met the reform of the written language with sympathy and understanding, whereas the reactionary forces in the republic and abroad used this example to brandish their discontent of Soviet power. By defending the old alphabet, they were clinging to everything that was now obsolete. Their claim that the introduction of the new alphabet would lead to the decline of national culture was based on their scepticism as to the future of their people.

Meanwhile, the idea of a transfer to a new alphabet became very popular among Soviet peoples, especially those speaking Turkic languages. At the end of the 1920s, and the beginning of the 1930s, many people inhabiting the USSR adopted the Latin alphabet: the Uzbeks, Turkmens, Kazakhs, Kirghizes, Yakuts, etc.

It is worth noting that in 1928 republican Turkey also introduced the Latin alphabet.

Simultaneously with the transfer to the new alphabet, much work had to be done to publish textbooks and manuals and evolve new terminology. Great importance was attached to this problem; a special commission on scientific terminology was organized at the Council of People's Commissars of the Azerbaijan republic. Thanks to the efforts of a great deal of teachers, scientific workers and party and government officials, the commission succeeded in compiling and publishing many initial textbooks on various subjects in the native language, terminological dictionaries, etc. The appearance of teaching and scientific terms in Azerbaijanian was a great help in the development of the educational system in the native language.

The 1920s were characterized by the opening of new

types of schools. With a view to making higher educational establishments accessible to the proletariat and for the training of specialists for the national economy and cultural construction from among workers' and peasants' sons and daughters, a workers' department with a study course of three years (day studies) and four years (evening studies) was opened at the Azerbaijan State University in December 1920, which gave its graduates a secondary education. Other educational institutions made their appearance in the school system: seven-year schooling on the basis of primary school, and three-year schooling for young rural people to study agronomy.

Extracurricular work began to occupy a larger place. Pupils' self-government committees and the Young Pionner and Komsomol organizations were functioning in schools. They each carried on an educational activity of their own with respect paid to the pupils' workload. This had the aim of fostering among school pupils the spirit of loyalty to the tasks of building a socialist society and teaching them the basics of social work.

The result in the first decade of the development of education in Soviet Azerbaijan was the following: a formation and consolidation of the school system, a considerable expansion of the school network and the entire technical and material basis, a growing number of pupils and definition of the forms and methods of teaching. Schools acquired a concrete experience in teaching and other educational work, more teachers came to work in schools. The number of secondary school graduates was growing with every passing year, which facilitated the solution to the problem of enrolment in higher and specialised secondary educational establishments.

Quantitatively, these results can be seen in Table 1.

This was a great achievement as compared with prerevolutionary times, and not only because the number of pupils and the network of schools had grown considerably. The important thing was that Azerbaijanians were drawn en masse to schools. In the 1926-1927 scholastic year, 1,928 primary and 19 secondary schools in the Azerbaijanian language functioned. Primary schools were attended by 84,000 Azerbaijanian children, that is, almost four times as many as in the 1914-1915 school year.

Table 1

FIRST RESULTS OF THE DEVELOPMENT OF PUBLIC EDUCATION IN SOVIET AZERBAIJAN[20]

Year	Number of Day Schools	Number of Pupils	Number of Teachers
1914/15	976	73,000	2,000
1927/28	1,478	171,000	6,000
1932/33	2,907	439,000	11,000

Of great importance was the fact that the social composition of primary school pupils also changed. In the 1926-1927 school year, the children of workers and farmhands comprised 17 per cent, those of working peasants, 55.3 per cent, office employees, 10.8 per cent, handicraftsmen, 4.9 per cent, whereas children who did not belong to working classes accounted for only 12.0 per cent. A similar picture was obtained in secondary schools.

The results achieved considerably strengthened the role of the school in the socio-economic and cultural life of Soviet Azerbaijan. But that was just the beginning. The Azerbaijanian school had a long way to go. In a decade it had reached a very high level and could hope for further advancement. The First Congress of Teachers of the republic, convened in May 1925, was a milestone along that way. The congress called on all teachers "to work selflessly in the field of the education and enlightenment of Azerbaijan's working masses".[21] The congress confirmed the priority aspect and importance of public education for the republic's future, and for the advancement of the people along the road to social and cultural revival. One of the outstanding figures of the October Revolution and the then First Secretary of the Central Committee of the Communist Party of Azerbaijan, S. M. Kirov, addressing the teachers' congress said: "The past, the old, the dark is behind us. Ahead is the promise of a new life, the real happiness of which the spirits of mankind had dreamt. I call on you to devote your efforts to this difficult and great work, one which humanity shall never forget".[22]

(d) Introduction of compulsory primary education

The rapid development of public education in Azerbaijan created a firm base for putting forward and solving a new, bold and great task for that period, namely, making primary education in the republic universal. In 1928, the 3rd session of the Central Executive Committee of the Azerbaijan Republic adopted a decision for universal transfer to compulsory primary education throughout Azerbaijan.[2 3] That was an exceptionally important cultural and political event in the life of the Azerbaijanian people. It would have been unthinkable 10 years before.

What prompted this decision? Was it feasible? Did it correspond to the vital requirements of the republic's socio-economic development? And how was it being implemented?

At the end of the 1920s and the beginning of the 1930s, major changes were appearing in the socio-economic and political spheres of the Soviet Union. Prior to this period, the country had coped with the task of rehabilitating and reconstructing its economy that had suffered from imperialist intervention and the Civil War. The decisive phase of the construction of socialist society began. Economically, it signified the necessity for industrial development, and in agriculture—a transfer to collectivization. These problems faced all Soviet republics. Naturally, Azerbaijan could not be excluded from these tendencies, all the more so if account was taken of the growing significance of the republic as a source of fuel and energy and the prospects of the development of the cotton industry there.

The above-mentioned factors could not but have an impact on the development of education and on the need to improve teaching. The growing professional skill of workers, their ability to tackle complex tasks of production and a rise in their technical knowledge and civic awareness became more weighty factors for a successful solution of the economic problems and those of cultural construction. As a result of this, the implementation of universal compulsory primary schooling came to the fore as the essential task of the entire sphere of education.

Although much had already been done, difficulties were encountered at each step: the lack of culture in a number

of regions of the republic, the persisting strong influence of religious prejudices, patriarchal customs and survivals, and the incomplete emancipation of Azerbaijanian women from religious and everyday burdens. It was necessary to mobilize all the energy of state bodies and public organizations and to stimulate the activity of the working masses themselves. With this aim in view employees of the People's Commissariat of Public Education and members of trade union and Komsomol organizations were mobilized and sent to various regions in the republic to help local government bodies.

It took the people of Azerbaijan only five to six years to effect a transfer to universal compulscry primary education. In the 1933-1934 school year the transfer was practically completed: more than 90 per cent of the children eligible attended primary school. Only an insignificant minority in rural areas, mainly girls, remained away from school.

The network of schools, especially the seven-year period ones, expanded in the republic and the number of pupils increased rapidly. The number of general schools had grown from 2,067 (1,779 primary, 259 seven-year, 19 secondary and 10 others) in the 1930-1931 school year to 3,334 (1,983 primary, 1,105 seven-year, 237 secondary and nine others) in the 1934-1935 school year. The student body during the same period had increased by more than 2.5-fold, reaching 581,100.[24]

As a result of these tremendous successes, Soviet Azerbaijan was ready for another step forward: to provide seven-year schooling, that is to say, an incomplete secondary education, to the entire young generation. With this aim in view, state allocations for the needs of education increased considerably. They had grown from 8.5 million roubles in 1930 to 436 million roubles in 1940. In other words, overall per head expenditures for public education had risen from 28.3 to 162.3 roubles during the period under review.[25]

The new task — transfer to universal compulsory seven-year school education — was formulated in the Resolution of the 8th Azerbaijan Congress of Soviets in 1935, adopted on the report of the People's Commissariat of Public Education on the implementation of universal compulsory

primary education. It emphasized the need to evolve measures for its solution, particularly for the expansion of the network of secondary schools and primarily in towns and workers' settlements, so that by 1937 there could be at least one secondary school in every district.[26] Public education bodies in the republic were faced with a host of other problems, especially that of pupils' dropping out (mainly girls), the training of teachers and raising of their prestige, renovation of curricula and study plans as well as the development of extracurricular work.

Mention should, first of all, be made of a certain restructuring of the general school. The point is that in the 1932-1933 school year, Azerbaijan's primary schools were transferred from a five-year to a four-year course. As a result, the structure of the general schools was as follows: a four-year primary school, a seven-year incomplete secondary school, and a 10-year complete secondary school. The new structure ensured continuous advancement from primary to complete secondary education. All graduates from the primary schools had the right to enter the fifth form without having to pass any exams, and seven-year school graduates could go on to the eighth form.

However, despite the open character of the general schools in the republic, a negative phenomenon emerged soon after the adoption of the decision on seven-year compulsory schooling, namely, the unwillingness of a certain number of parents to give their children the opportunity to continue their education after primary school. In the beginning, the dropout rate amongst primary school graduates was massive, especially among girls.

The reason for this phenomenon was connected mainly with the situation in the Azerbaijanian villages where, despite a considerable headway being made in the development of school education and the drawing of the overwhelming majority of girls to it, obstacles still existed to impede their getting secondary education. Mention should be made of the widely practised early marriages inherited from the past which resulted in their abandoning studies. This custom had to be done away with. Bodies of Soviet power, using the law and progressive public opinion, had to devote much energy and effort to explanatory work among the population. Surviving customs and prejudices were denounced in

speeches by well-known party, government and public figures as well as in the press.

Leading bodies of the republic repeatedly discussed the question of countering the dropout of girls. In a special decree (1936), the Central Executive Committee of Azerbaijan demanded that the district executive committees and district public education boards were to direct the special efforts of the rural Soviets, teachers and collective-farm public to the "drive for the elimination of student dropout, starting with the girls, by creating the necessary conditions that would ensure regular school attendance by them".[27] In accordance with this, the local bodies and the public conducted intensive explanatory work among the population.

This drive was part of a campaign for transfer to compulsory seven-year schooling. It could not be confined to explanatory work and persuasion only. Another aspect of this important problem was an improvement in the quality of teaching by perfecting curricula and study plans, publishing better text books and aids in accordance with the requirements and level of the development of science and perfecting teaching methods.

There were quite a few shortcomings and serious errors in this important matter. For instance, at the end of the 1920s and beginning of the 1930s, certain pedagogical innovations became widespread which led to a disorganization of teaching and education. Among them was the so-called team-laboratory method of teaching in general schools, and also at higher and secondary specialized educational institutions. The advocates of this method went on the presumption that collective responsibility of students should be the basis of teaching. The role of a teacher was reduced to that of an advisor only. In other words, the leading role of a teacher in the process of learning was completely ignored. This resulted in a negative attitude to the adopted curricula, lessons and the individual responsibility of the student. The consciousness in students was unjustifiably exaggerated: on the contrary this very element was the one to be developed by studies and teachers.

In the early 1930s these innovations, which had seriously harmed the quality of teaching, were abandoned. A strict timetable of studies was established and school regulations

were introduced. Schoolwork began to be based on the methods of teaching already tested in theory and in practice, the main form of its organization being lessons. Teachers repeatedly expounded the elements of the disciplines, training pupils to work along with texts and books, in laboratories or school workshops. The wide use of teaching aids, as well as visits to factories, museums, farms, etc. were recommended.

The teacher was at the centre of this multifaceted work. His was the decisive role in the implementation of the seven-year school education of the republic's younger generation. The expansion of the network of general schools (in 1920 alone, 350 schools were opened in Azerbaijan, whose student body exceeded 130,000) demanded more teachers. Already in November 1921 the first male teacher training institute (with three departments: physics and mathematics, natural sciences and chemistry and literature) was opened. In 1921, the first Azerbaijanian women's institute of pre-school education was organized; later, in the 1922-1923 school year, it became the Higher Pedagogical Women's Institute. In 1923, it merged with the male teacher training institute, thus forming the Higher Pedagogical Institute.

Of great importance during that period was the professional, ideological and theoretical level of teachers, their devotion to public education and the prestige they enjoyed among the working masses.

These considerations provided the foundation for a number of measures aimed at helping the teacher and raising his prestige. In January 1931, at the 2nd Congress of Azerbaijan's teachers, a decree of the Council of People's Commissars of the Azerbaijan republic, Concerning Additional Privileges for Rural Teachers, and a decree of the Central Executive Committee and the Government of the Azerbaijan republic, Concerning Personal Titles for Elementary and Secondary School Teachers, were made public. These titles were as follows: "Teacher of Primary School", "Teacher of Secondary School" and the honorary title "Merited School Teacher".

As a result of subsequent certificate awards, nearly all teachers received titles. Those not having a complete education were given a limited time for its completion by a cor-

respondence course.

A decree adopted in 1936 by the Communist Party and the government of the republic on raising salaries of teachers and an additional payment for correcting pupils' written works, for carrying out the duties of form master, etc., was also aimed at improving the working conditions of school teachers. Attention was also drawn to the need to upgrade teachers by offering them correspondence courses.

As a result, the number of qualified teachers in the republic improved noticeably. In the 1934-1935 school year 66.4 per cent of all teachers had a complete higher or secondary education. The number of teachers also increased. In the 1932-1933 school year there were about 11,000 teachers, whereas in the 1940-1941 school year the figure reached 22,000.[28]

Advanced-minded teachers took an active part in the transformation of the economy, in political-educational work among the population and in the reorganization and improvement of teaching methods, contributing articles to the press and giving lectures to their colleagues. They made a considerable contribution to the development of rural areas, to the strengthening of collective farms and to voluntary political work among the population.

Transfer to seven-year compulsory schooling required a revision of existing curricula and study plans. After extensive discussions on the question, it became evident that there existed a need to increase the number of lessons of general educational disciplines, to renovate and enrich the contents of curricula and to search for new forms of teaching. New curricula and study plans provided for a twofold increase of the number of lessons of the native language; Russian lessons increased by two hours a week. A most important criterion was "to ensure a proper and systematic learning of the fundamentals of sciences by schoolchildren ... and the use of correct speech, writing, mathematics, etc."[29]

On the basis of the adopted curricula, new text books were compiled and published. During that period Soviet Azerbaijan was unable to cope with this big task. It required the experience of Soviet Russia. On such general subjects as mathematics, physics, chemistry, geography, economic

geography and history, Russian text books were used which were translated into Azerbaijanian. As for other subjects connected with the particular historical and cultural features of the republic: the native language, literature, the Russian language for the national school, foreign languages, history and geography of the republic, drawing and music, text books were prepared by Azerbaijan teachers.

The question of attracting children to independent work acquired a special significance. This is why much attention was paid to homework. Regular individual control of the learning assimilated formed the basis of an evaluation of the work done. In 1933, transfer and final exams for the 4th to 10th form pupils were introduced, and in 1935 a five-mark system of rating students' progress was established.

During that period opportunities increased for labour and polytechnical education; school pupils were acquainted with the basic principles of production and with how to manipulate basic instruments of production. Workshops and labour training lessons were organized at some of the best schools.

During the growing polytechnization of education and improvement in the forms and methods of teaching and general educational work, the need arose for the broadening of extracurricular activities: excursions to factories and plants, the drawing of senior pupils to socially useful productive labour, etc. Special emphasis was laid on the ideological, political, artistic and physical education of children both in and out of school.

Take, for instance, artistic education. In 1935, a special house of artistic education for children was opened in Baku, which later became the main centre of the amateur artistic activities of school pupils in the republic. The work of the Baku Young People's Theatre, which had been functioning for more than 10 years, considerably improved. It was attended by about 150,000 children annually. Special film shows for children were organized at the city's cinema theatres. A children's puppet theatre was opened in Baku. Workers' clubs also catered for children. Thousands of school pupils were drawn to independent work in various technical, musical, fine arts, sports, agricultural and other extracurricular groups whose numbers considerably increased during the period under review.

Along with economic advancement, Soviet Azerbaijan

was now able to allocate more means to physical education and sports activities in the schools and to the health and hygiene of the children. Twelve to 15 thousand school pupils spent their holidays at summer camps and permanently operating children's sanatoriums.[30] Dozens of children's technical centres, Young Pioneer clubs, Palaces of Culture and hundreds of groups were organized, where tens of thousands of school pupils spent their free time. Children who were members of these groups were studying almost all fields of science and culture; there were literary, drama, historical, geographical and musical groups, groups of young photographers and radio operators, young chess players, model aircraft designers, etc.[31]

A great deal of organization work, the strengthening of the technical material and teaching basis of the Azerbaijanian school, the increase in the number of teachers and a rise in their qualification level, the application of new forms and methods of teaching and formation, the constant renovation of curricula and study plans — all this brought the republic nearer to the goal aimed at for that period: namely, compulsory incomplete secondary seven-year schooling for the growing generation of Soviet Azerbaijan. However, the treacherous attack of fascist Germany on the Soviet Union and the need to mobilize the entire Soviet people for the struggle against Hitler's invaders prevented the republic from reaching that goal. It had to be postponed, although during the Great Patriotic War the Azerbaijanian school continued its fruitful work.

The general results of the 20-year development of the school system in Soviet Azerbaijan can be seen from the following table.[32]

Table 2

DEVELOPMENT OF GENERAL EDUCATIONAL SCHOOLS IN SOVIET AZERBAIJAN

Year	Number of Schools	Number of Pupils	Number of teachers
1914/15	976	73,000	2,000
1940/41	3,575	655,000	22,000
Growth in %	366	900	1,100

(e) Azerbaijan's transition towards a republic of 100 per cent literacy

The creation of a harmonious system of school education is part of the cultural revolution. A no less important aspect of the problem is the elimination of illiteracy, especially in countries whose population was deprived of the opportunity to study because of foreign domination. Having been a backward, outlying region of tzarist Russia with 100 per cent illiteracy, Azerbaijan was also faced with this problem. Only by eliminating this social evil inherited from the old society would it be possible to hope for any rapid rise in the educational level of the population, or for any socio-economic and scientific or technical progress for that matter.

The need to eliminate illiteracy is obvious today and no-one could deny it. But during the first decades of the 20th century this was not so evident. Man's right to education was not yet universally recognized as an elementary one. Hundreds of millions of people remained outside the sphere of education, especially in colonies and semi-colonies.

We know that the elimination of illiteracy is still an urgent problem in many developing countries, and not only in them. This is only natural, for the total number of illiterate people in the world continues to grow, having already reached a colossal figure of 750-800 million. This is why the experience of the countries and regions that have succeeded in doing away with that scourge is of great topical and international interest. It is the result of these considerations that inspired this work to devote special attention to the elimination of illiteracy in Soviet Azerbaijan.

The Soviet concept and practical policy in eliminating illiteracy was based on Lenin's belief that the illiterate man remained outside politics. The point is that illiteracy does not permit the working masses to join an active struggle for the construction of a new society, limits their labour and political activity and forbids them using the scientific and cultural achievements of mankind. In short, the elimination of illiteracy is a vital condition to enable the harmonious development of the human character.

This concept was politically embodied in a special decree signed by Lenin in 1919. It emphasized that the entire illiterate population "must learn to read and write either in

its native tongue or in the Russian language, as it wishes".[33] The decree concerned Soviet Russia. When Soviet power was proclaimed in Azerbaijan, the problem of the abolition of illiteracy was the main preoccupation of republican bodies — both party and government.

In its address to the working people of the republic, the Azerbaijan Central Executive Committee emphasized that the tasks facing the new Soviet power were enormous, that the heritage of the old regime should be destroyed and that "all state and social relations should be organized along the new lines. This is a difficult task which requires tremendous work and is a great strain. However, more difficult work lies ahead: the complete elimination of illiteracy without which it will be ultimately impossible to achieve the proletarian ideal".[34]

How should this difficult job be tackled? Need we recall the fact that there were hundreds of thousands of people who had to be taught to read and write? Many of them had a natural distrust of education, a sceptical attitude towards it. These sentiments were exploited by the feudal and religious opponents to the education and enlightenment of the working masses. There was another difficulty. The elimination of illiteracy had to be carried on by studying but without interrupting work. Naturally, even the enthusiasts wishing to learn to read and write found it hard to combine work with study, to say nothing of the fact that many of them had family responsibilities. Finally, literate people were needed to teach others, as well as text books, aids, methods...

These and other problems had to be tackled by the Central Commission on Combatting Illiteracy set up at the People's Commissariat of Public Education in 1920. In April 1921, it was decided to organize a department called "Glavpolitprosvet" (department for political and general education) which was given the responsibility of supervising the activities of all educational and cultural institutions: libraries, reading rooms in rural areas, theatres, cinemas, etc., and organizing and directing all work on the elimination of illiteracy. In rural areas, local commissions were functioning which began in 1921 to organize special schools for eliminating illiteracy financed by the state budget.

To give the movement for the elimination of illiteracy an even more mass character a special society "Down with Illiteracy!" (DWI) was organized in 1924. Its task, apart from propaganda work, was to collect means for expanding schools and courses for the elimination of illiteracy. In March 1924, the government of the republic adopted an important decision, Concerning the Liquidation of Illiteracy Among the Population of the Azerbaijan Republic, making it incumbent upon the population from 15 to 45 years of age to learn to read and write".[35] The Central Committee of the Azerbaijan Communist Party in its circular letter of 1924 ordered that all local bodies should draw to this work as much of the general public as possible.[36]

From the very beginning of the anti-illiteracy campaign it became clear that the efforts of teachers and other educational workers alone were not enough to cope with the task. People without special pedagogical training had to be orientated towards this work. The scope of the operation required the mobilization of the entire literate population, for the time available was very short. This fact characterized the problem and added to the complexity of its task.

Many Communists, Komsomol members and workers of official bodies who could devote at least several hours daily to overtime work for teaching illiterate people to read and write were mobilized. However, it was clear that success in the anti-illiteracy campaign depended on the measure upon which literate people could be drawn to the work on a voluntary basis. Combining the steps taken at state or republican level with the principle of voluntary participation of thousands of civic-minded citizens formed an original approach to the solution of this problem and [illegible]ey factor for the success of this campaign in the shortes[illegible] ossible time in history.

Another original feature should be mentioned. Soviet power, in an effort to include all illiterate people in its anti-illiteracy campaign, took measures to financially encourage those who attended special schools organized for this purpose. In 1922, the Council of People's Commissars of the republic adopted a decision by which workers attending schools for the elimination of illiteracy were paid a bonus of 50 per cent of their wages or salaries.[37] Working people learning the alphabet had the right to a shorter work day

with full pay for the entire term of study. These measures showed what significance Soviet power attached to the elimination of illiteracy in the country. They contributed to understanding the aims of the campaign better and gave concrete results, drawing ever new sections of the population into it.

Along with the development of the campaign, new and more varied forms of its implementation emerged. It became part of a wider system of the general education of the adult population, which included both the school and extracurricular structures. This system attached great significance to general education schools and courses for adults to acquire knowledge — first in the sphere of primary schools, and then in that of the seven-year and even secondary schools. In Azerbaijan, such schools first appeared in the 1927-1928 school year. Subsequently, their numbers grew rapidly. In 1940, there were 861 schools for adults attended by 40,300 persons.[38] In 1935 these schools were renamed evening incomplete and complete secondary schools for adults, which more aptly indicated the volume and range of knowledge installed. There were preparatory classes at these schools where adults could get a four-year primary education within two years. As of 1937, their graduates had the right to enrol in higher educational establishments, which considerably increased the enrolment of adults in these schools.

At the same time particular attention was paid to eliminating illiteracy among working adolescents aged from 14 to 16 who had either not attended school or had left it without completing primary education. In one of its decrees (1925) the Central Committee of the Communist Party said that the "Down with Illiteracy!" societies should, first of all, deal with eliminating illiteracy within this age group.[39]

Parallel to this, special schools were being opened in Soviet Azerbaijan, as well as in all other Soviet republics, for working adolescents to acquire the following:

—professional competency;

—specialized and general knowledge;

—socio-political knowledge.

Experience prompted the division of these schools into two groups:

—training to form skilled workers and financed by the factories and plants;

—vocational schools in industrial branches which did not need any particular skill and auxiliary work.

Expenditures for these schools had to be distributed among the various economic organizations and local bodies of power concerned.

The development of various forms and methods of the elimination of illiteracy had to be accompanied by a number of measures in order to supply students with text books and aids. This also required a great amount of organizational work and means. Orders for the material necessary for teaching illiterate people had to be met immediately by special decision of party and government bodies. In Azerbaijan, this work began in the months following the proclamation of Soviet power. Already in 1921, "New Primer" in Azerbaijanian, "First Book of Worker", also in Azerbaijanian, and other teaching material were published in the republic.

As for the teachers for these schools and courses for eliminating illiteracy, they were being trained on special short-term courses. Literate people who were drawn to teaching illiterates on a voluntary basis, were divided into groups working under the guidance of teachers. These groups, apart from their purely educational work, informed illiterate people in towns and rural areas about government measures, told them about political developments, read newspapers, decrees, etc., to them.

Naturally, villages took pride of place in the anti-illiteracy campaign, for they suffered most from ignorance and backwardness. Three closely connected elements were included in the programme for teaching the adult rural population to read and write. The idea was to give students a minimum of political knowledge, as well as a general and agricultural education. This idea was present, in varying degrees, in all programmes for the eliminating of illiteracy.

Taking into account the great socio-political and cultural importance of the struggle against illiteracy, the republican party and government bodies regularly dealt with this problem, striving to find the most efficient and acceptable forms and methods of work, adopting major decisions and mobilizing people for their implementation.

These bodies constantly analyzed the results of the anti-illiteracy campaign, propagated concrete experience, mapped out further tasks and searched for new possibilities and sources to work from.

In November 1931, when a census revealed that more than one-third of the adult population in the republic remained illiterate, the Communist Party of Azerbaijan adopted a decision to complete the elimination of illiteracy within the next few years through the development of a new massive campaign. This was the beginning of what was termed a cultural onslaught in which thousands of people who had acquired an education took part on a voluntary basis. The participants in that drive were called "soldiers of culture". Indeed, that was an army of educated people with a high sense of civic responsibility, who were called to wage the last battle against illiteracy in the republic.

The political will of the party and government bodies of Azerbaijan, combined with the voluntary movements of the educated and patriotically-minded part of the population for the elimination of illiteracy and the enthusiasm of the working masses whose thirst for knowledge was growing from year to year, yielded positive results. The number of persons learning to read and write and receiving an education at an ever higher level, was growing all the time. During the last three years of the 1920s, almost 315,000 people learned to read and write or improved their general educational level, and in the next three years almost 770,000 more.[40]

However, the task was not fully solved. New efforts were being made which enabled the authorities to include hundreds of thousands of working people in the movement. Between 1938-1940, 530,000 more people learned to read and write. According to the 1939 census, the literacy level in Soviet Azerbaijan reached 82.8 per cent, principally men — 88.8 and women — 76.1 per cent. This was a great achievement. In the next two years, the republic was expecting to have eliminated illiteracy completely, but the war that broke out in 1941 postponed the final achievement. Looking ahead, we mention the fact that the 1959 census gave the following figures: 97.3 per cent of the republic's population were literate, including 98.8 per cent of men and 96.0 per cent of wo-

men.[41] On the whole, the educational level of the population had grown considerably. Soviet Azerbaijan became a republic with a 100 per cent literacy within a historically short period.

7) Conclusions—Chapter I

Two decades are not at all a long period in the development of a country. But, if the results achieved by Soviet Azerbaijan are compared to what it started out with, the contrast between the republic's present and past is even more striking. The younger generation of the Azerbaijanian people who started upon their independent careers in the late 1930s could never have imagined the ignorance and lack of rights Azerbaijan's population had suffered from in the past. And now, within a short period of time, a new school, accessible to all and based on the humanitarian ideals of socialist society had been founded. This school was able to permanently tackle all new tasks and aimed at the implementation of universal and compulsory seven-year education. It became an important centre for the education, culture, political and ethical formation of the working people.

Apart from general schools, the republic also had a network of extracurricular institutions which played a great role in the drive against illiteracy. School and extracurricular education were merged into the wide flow of the cultural revolution.

It is impossible to understand the sources of such a singular achievement in the life of the Azerbaijanian people if one does not take into account the major revolutionary transformations in the whole of Soviet society. The abolition of the exploiting classes, the great changes in industry and agriculture, the transfer of the country's riches into the hands of the people have led to unprecedented changes in the social structure of society and in the social psychology of the working masses. The radical turning point in the destiny of the Azerbaijanian people led them from a state of stagnation on to the road of creation and prosperity. The huge masses of Azerbaijanian working people witnessed a great contrast between the obsolete past and the developing new future. The lack of political

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rights and complete ignorance were replaced by people's power, the implementation of the basic aspirations of the people: equality, justice, fraternity and happiness. The evidence was there to prove to the people that it was indeed so. But a great amount of political and educational work was required in order to remove prejudices that had accumulated in people over centuries against reform and to overcome stagnation and religious survivals. At that time, the best representatives of the people — Communists and Komsomol members, progressive-minded people, all those who cherished the ideals of a new society — were painstakingly explaining to Azerbaijanians the great significance of education, knowledge and the new policy aimed at overcoming the cultural backwardness of the people.

These efforts resulted in a major achievement: tens of thousands of people began to be interested in education. It became possible on that basis to implement the idea of mass education of Azerbaijanians, including Azerbaijanian women. The scale of the struggle to overcome the past customs in people's minds was so great that it could quite rightly be called a nationwide campaign that exerted a positive influence on the entire way of life and the psychology of each Azerbaijanian family and the entire Azerbaijanian society. This struggle proved to be an important one in attracting more representatives of the native people into the sphere of education.

Attracting Azerbaijanian youth to education was a major aspect of a well-elaborated policy of Soviet power and Communist Party aimed at overcoming years of cultural backwardness of the formerly downtrodden peoples of Russia. Soviet Azerbaijan in those years made a major stride forward in solving the problem, a most important one in the cultural revolution. It was ultimately solved during the postwar period.

[1] V.I. Lenin, "The Tasks of the Youth Leagues", *Collected Works*, Vol. 31, Progress Publishers, Moscow, 1982, p. 284.

[2] Newspaper, *Kommunist*, September 21, 1920 (in Azerbaijanian).

[3] Newspaper, *Kommunist*, June 22, 1920 (in Azerbaijanian).

[4] Newspaper, *Kommunist*, May 12, 1920 (in Azerbaijanian).
[5] Newspaper, *Kommunist*, May 15 1920 (in Azerbaijanian).
[6] Magazine, *Public Education*, No.1, 1920, p. 14 (in Azerbaijanian).
[7] Newspaper, *Kommunist*, May 12, 1920 (in Azerbaijanian).
[8] Magazine, *Public Education*, No. 1, 1920, pp. 10-14 (in Azerbaijanian).
[9] Magazine, *Jeni Odada*, September 28, 1920 (in Azerbaijanian).
[10] *Cultural Construction in the Azerbaijan SSR. Statistical Survey*, Baku, 1961, p. 25.
[11] Newspaper, *Kommunist*, June 29, 1921 (in Azerbaijanian).
[12] Newspaper, *Bakinsky Rabochy*, June 8, 1922.
[13] *Curriculum of Primary Schools*, Baku, 1925, p. 5.
[14] *Curriculum of Primary Schools*, Baku, 1925, pp. 5-6.
[15] *Curriculum of Secondary Vocational Schools*, Baku, 1923, p. 31.
[16] Ibid., p. 105.
[17] P.A. Azizbekova, *V.I. Lenin and Socialist Transformations in Azerbaijan*, Moscow, 1962, p. 298.
[18] T.A. Musayeva, *The Struggle for the Elimination of Illiteracy in Azerbaijan. The 40th Anniversary of the Azerbaijan SSR. Collection of Articles*, Baku, 1960.
[19] T.A. Musayeva, *Revolution and Public Education in Azerbaijan*, Baku, 1970, p. 145.
[20] *Public Education, Science and Culture in the USSR*, Moscow, 1977, pp. 48-49.
[21] Newspaper, *Kommunist*, No. 121, 1925 (in Azerbaijanian).
[22] Magazine, *Jeni Odada*, No. 119, 1925 (in Azerbaijanian).
[23] *Collection of Laws and Decrees of the Government of the Azerbaijan SSR*, Baku, 1928, p. 314.
[24] *The National Economy of the Azerbaijan SSR. Statistical Survey*, p. 443.
[25] M. M. Mekhtizade, *Essays on History of Soviet School in Azerbaijan*, Moscow, 1962, p. 146; taking into account also expenditures on cultural-educational work, developement of science, book publishing, development of the arts and radio broadcasting.
[26] *Collection of Laws and Decrees of the Government of the Azerbaijan SSR*, Baku, 1935, p. 160.
[27] *Collection of Laws and Decrees...*, Baku, 1935, p. 35.
[28] *Public Education, Science and Culture in the USSR*, Op. cit., p. 49.
[29] *Public Education in the USSR. Collection of Documents. 1917-1973*, Moscow, 1974, p. 161.
[30] Archives of the Ministry of Public Education of the Azerbaijan SSR.
[31] Newspaper, *Bakinsky Rabochy*, January 12, 1940.
[32] *Public Education, Science and Culture in the USSR*, Op. cit., pp. 48-49.
[33] *Public Education in the USSR. Collection of Documents. 1917-1973*, p. 377.
[34] Central State Archives of the October Revolution of the Azer-

baijan SSR.

[35] *Statistical Board of Azerbaijan*, No 6, 1924, p. 145.

[36] Party Archives of the Azerbaijan Branch of the Institute of Marxism-Leninism.

[37] T.A. Musayeva, *Revolution and Public Education in Azerbaijan*, p. 51.

[38] *Achievements of Soviet Azerbaijan During 40 Years. Statistical Survey*, Baku, 1960, p. 194.

[39] *Public Education in the USSR. Collection of Documents. 1917-1973*, Op. cit., p. 380.

[40] T.A. Musayeva, Op. cit., pp. 59, 130. *Socialist Construction of the Azerbaijan SSR*, Baku, 1935, p. 404.

[41] *Public Education, Science and Culture in the USSR*, Op. cit., p. 10.

Chapter II

UNIVERSAL EIGHT-YEAR COMPULSORY EDUCATION

The setting up of a public education system which could satisfy the entire growing generation, the universalization of compulsory primary education and the elimination of illiteracy in the greater part of the Azerbaijanian population, opened up favourable prospects for a further rise in the educational and cultural level in Azerbaijan. The Hitlerian aggression, as we have already mentioned, forced the Soviet people to change their plans of peaceful socio-economic and cultural construction, and give priority to the means of countering the fascist armies.

Sometimes, in discussing the questions of education at international conferences, reference is made to various difficulties—a shortage of resources and the economic and financial world crises—to explain the numerous setbacks and shortcomings in the development of education. Naturally, these phenomena do not facilitate progress in this field. But are they sufficient ground for doubting the major role of education as a fundamental factor of socio-economic development, oppose education with other substitutes and deprive the former of its place of priority in the development strategy? This is a very important question! This chapter covers the period between 1941 and the mid-1960s, by describing the functioning of the general school of Soviet Azerbaijan under the difficult conditions of the 1941-1945 war and postwar reconstruction, its aims and results achieved. This was the second part of the first stage in the development of education in Soviet Azerbaijan.

a) The uninterrupted character of educational development

Although the territory of Azerbaijan was not a battle area during the last war, its national economy suffered enormous losses. Their consequences had an adverse effect on the development of education, particularly the general schools. The mobilisation of teachers, many of whom had been killed at the front, placed the school in a very difficult position both during and after the war. Other difficulties had to be reckoned with too: a shortage of resources, requisitioning of school premises by the army and curtailment of the network of educational institutions, including teacher-training establishments.

However, the school continued to remain the centre of attention during those difficult years. Its vital role in the life of socialist society had never been doubted. Its role even increased considerably, for the school assumed additional functions in the formation of the younger generation: the need to give pedagogical and material assistance to the children of frontline soldiers, to take care of the neglected and homeless children whose parents had been killed and to step up patriotic education. In December 1942, the Central Committee of the Azerbaijan Communist Party and the Council of People's Commissars of Azerbaijan adopted a special decision on this question, ordering educational and other bodies "to organize systematic assistance to needy children whose parents were mobilized in the Red Army, providing them with food, clothing and footwear, textbooks and other study aids".[1] The newspaper *Pravda*, organ of the Central Committee of the Soviet Communist Party, wrote that "concern about children and their upbringing and education remains one of our primary concerns".[2]

During that period, and due to the reasons mentioned above, the growing dropout rate of school pupils became an acute problem. Moreover, as a result of slackening control many children remained away from school. Urgent measures were required to remedy this.

An expansion of the network of boarding schools proved to be an effective solution. This required more financial aid, which was hard to find during the war. However, the state managed to provide the necessary funds for the open-

ing of boarding schools. In the 1943-1944 school year alone, 40 such establishments were opened in Azerbaijan, which catered for 1,500 children, all at the expense of the state. The number of these boarding schools exceeded 100. Children's canteens were organized in big cities where free dinners were served to the children. The network of orphanages was increased in the republic: there were up to 100 such homes taking charge of more than 10,000 children.

The dropout rate of school children and the fact that some of the children were not schooled could also be explained by the material hardships suffered by their families. The Soviet school could not remain indifferent to this situation relating to the development prospects of education. Youth organisations played a great role in this matter, having initiated assistance to frontline soldiers' children.

Young people in Soviet Azerbaijan accumulated a wealth of experience in this field. In 48 districts of the republic and on the initiative of collective farm young people, 1,253 hectares were sown and cultivated: grain, melons and water melons were harvested and given to soldier's children. 300 Komsomol stipends were allocated to children who had lost their fathers in battle, and whose progress in school was above average.[3] On the initiative of Komsomol members, special children's centres were organised at 47 large industrial enterprises, and children's homes were opened in 101 collective farms for those whose parents had died at the front. 25,000 orphans were placed in these children's homes and vocational schools, especially those of railwaymen.[4] These important measures made it possible to curtail considerably the dropout rate of school pupils caused by the war, to keep the number of schools functioning and fulfil the educational project.

The conversion of schools to meet wartime needs, the initiative of teams of young workers and collective farmers especially had a great pedagogical effect. The experience which the schools had already accumulated by the combining of studies and social work was further developed and strengthened. An especially interesting part of this experience was the organization of collective labour by pupils divided into school teams for joint work of various kinds. School children were thus acquiring the habit of collective work, they developed feelings of comradeship, the abil-

ity to live in a collective and enjoy good relationships. The realization of the duty accomplished for the country, its soldiers fighting at the front and their families, greatly contributed to the development of civic sentiments among school children. Another important result was the mass character of their useful social work. Hundreds of thousands of school children in Azerbaijan worked at various jobs, especially during the summer holidays.

The most important principle of the Soviet educational system — the link between school and daily life — received an additional impetus during the Great Patriotic War and assumed various forms. That was why the school believed rightly that it had made a considerable contribution to the victory over Hitlerian fascism.

Parallel to the strengthening of the elements of useful social work in teaching during that period, the need arose to expand and improve the quality of teaching humanities, such as the native language and literature, the Russian language and literature, the history of the USSR and that of Azerbaijan, the Constitution of the USSR and that of the Azerbaijan republic, etc. The Azerbaijan people's poet, Samed Vurgun, in an article entitled "Writing Better Books for Children", dealing with the tasks of literature in fostering Soviet patriotism, said that patriotism was perhaps the most sacred human feeling of all. This is one of the factors, probably the most significant, which provides an impetus to progress. As the child grows, his feelings about his fellowmen become multiple. The verity of his concepts depends on the amount of knowledge he has on his homeland. "This is why the task of literature", Samed Vurgun wrote, "is not to make dogmatic declarations and abstract definitions concerning the homeland, but to give correct information presented in an artistic way".[5]

b) The educational level of the Azerbaijanian people

Despite great efforts and the implementation of quite a few important measures, it was very difficult to maintain the previous educational level in Azerbaijan, as in the entire Soviet Union, for that matter, during the war years. An even more difficult situation took shape in the Ukraine, Byelorussia and in other regions occupied by the German

invaders. When the results of the devastation caused by the war had been estimated, it became clear that to reach the prewar educational level would be an exceptionally difficult task, requiring enormous resources.

The events had, however, emphasized the need to retain education's priority in the strategy of the socio-economic and cultural development of the Azerbaijan republic. It became concrete in the five-year plan for the rehabilitation and development of Azerbaijan's economy (1946-1950), which aimed at completing in a short space of time the universalization of compulsory seven-year education. This meant not only reaching the prewar level, but increasing it. The idea was, first, to put an end to illiteracy among the population where it subsisted; secondly, to expand the network of schools to cater for all the children of the corresponding age group; and thirdly, to provide an opportunity to make up for the time lost by young people who had been unable, for various reasons, to receive a normal education during the war.

At the same time, it should be borne in mind that the standard of teaching had to be raised. The war had had an adverse effect in this respect. This task was emphasized at the 3rd Congress of Azerbaijanian teachers convened in August 1946.

The tasks set could be fulfilled provided the financial resources set aside for the development of education were greatly increased. Before the war, expenditures on education were mainly provided by the state budget. On the eve of the war the USSR Government introduced a tuition fee in the upper forms of the general school. The improved standards of living of the population made it possible to demand a contribution to educational expenses; in any case, the amont was small.

In postwar years, the state continued to allocate considerable sums for this purpose. These were rapidly growing in Azerbaijan, having reached 79.3 million roubles in 1953; 109.5 million in 1958; 178.9 million in 1962. In all, it amounted to one-quarter of the republican budget.[6] However, the state could not provide enough means. Turtion fees, which incidentally were abolished in 1956, were of very little help. It was necessary to search for new ways to increase financial aid to deal with the rapidly gro-

wing requirements for education.

A campaign was launched to construct school buildings on a voluntary basis, by people working at industrial enterprises and on collective and state farms. Unfortunately, it is not possible to give an adequate financial evaluation of the contribution by this population campaign to the development of education in the republic. Here are just a few figures. During the 1942-1963 period the state budget had financed the construction of 272 school buildings in Azerbaijan, for 122,400 pupils. Along with that, republican collective farms alone, during the 1946-1963 period, had furnished general schools for 96,000 pupils.[7] Although the contribution of industrial enterprises and collective farms was mainly the construction of school buildings, this data shows a certain expansion of the sources financing the development of education. What is more, this trend continued to grow, covering other expenses, such as the allocation of means by enterprises and collective farms to pay teachers, improve their working conditions and the granting of certain privileges.

The constant growth of financial resources made it possible to tackle various problems successfully. As for the training and upgrading of teachers, this subject will be dealt with in the next section of this chapter. The war dealt a heavy blow to public education in Azerbaijan: thousands of teachers had been killed in battle. They had to be replaced by new, well-trained teachers.

One of the central problems was the expansion of the network of general schools, especially seven- and eight-year and ten-year schools. Results of the development of the network of general schools in the republic by the end of the period under review are given in Table 3.[8]

This data gives much food for thought. It is evident that a decrease in the number of schools, especially secondary, during the first five-year period was caused by the war. Curtailment in the number of schools during the following five-year period could be explained by demographic consequences of the war. As for the period after 1950, a decrease in the number of primary schools, on the one hand, and an increase in the number of secondary schools, on the other, was mainly caused by a trend to amalgamate schools. There were two basic reasons for that: first, pedagogical

Table 3

RESULTS OF THE DEVELOPMENT OF THE GENERAL DAY SCHOOL NETWORK IN THE AZERBAIJAN REPUBLIC IN 1940/41 — 1965/66 SCHOOL YEARS

Year	Total of Schools	Primary	Including Incomplete Secondary	Secondary	Schools for Handicapped Children
1	2	3	4	5	6
	Republic as a whole				
1940/41	3,575	1,668	1,240	654	13
1945/46	3,258	1,492	1,290	470	6
1950/51	3,630	1,669	1,509	444	8
1955/56	3,616	1,345	1,513	751	7
1960/61	3,837	1,466	1,561	805	5
1965/66	4,195	1,540	1,881	765	9
	Urban Settlements				
1940/41	365	72	94	187	12
1945/46	322	77	86	153	6
1950/51	412	105	131	168	8
1955/56	459	73	124	255	7
1960/61	598	96	188	309	5
1965/66	774	115	380	270	9
	Rural Areas				
1940/41	3,210	1,596	1,146	467	1
1945/46	2,936	1,415	1,204	317	-
1950/51	3,218	1,564	1,378	276	-
1955/56	3,157	1,272	1,389	496	-
1960/61	3,239	1,370	1,373	496	-
1965/66	3,421	1,425	1,501	495	-

considerations (large schools have more favourable conditions for an improvement in teaching and formation, they can be better equipped, etc.); secondly, there was the need to save money (experience showed that larger schools are more economical).

The demographic consequences of the war made themselves strongly felt with regard to the lack of increase in the numbers of general school pupils. This can be seen on Table 4.[9] Due to a drop in the birthrate, their prewar number was increased in the 1960-1961 scholastic year only. A decrease in the number of children in primary schools after the 1950-1951 scholastic year is a consequen-

ce of the already mentioned trend for larger schools. In other words, more and more children enrolled in general schools where they could study from first form to terminal form.

Table 4

GROWTH IN NUMBER OF PUPILS IN GENERAL DAY SCHOOLS IN AZERBAIJAN DURING THE 1940/41 — 1965/66 PERIOD

Year	Total number of pupils (thousands)	Including in schools			Schools for Handicapped Children
		Primary	Incomplete Secondary	Secondary	
1	2	3	4	5	6
Republic as a whole					
1940/41	655	102	229	322	2
1945/46	487	90	199	197	1
1950/51	622	103	278	238.9	2
1955/56	593	40	191	361	1
1960/61	673	53	238	381	1
1965/66	1,035	73	468	493	1
Urban settlements					
1940/41	210	14	42	152	2
1945/46	155	18	34	102	1
1950/51	224	26	61	135.1	2
1955/56	248	7	42	198	1
1960/61	314	8	71	234	1
1965/66	495	12	205	277	1
Rural areas					
1940/41	445	88	187	170	0.1
1945/46	332	72	165	95	-
1950/51	398	77	217	103.8	-
1955/56	345	33	149	163	-
1960/61	359	45	167	147	-
1965/66	540	61	263	216	-

The various requirements and tasks facing the Azerbaijanian school in the postwar period called for a search for new types of general schools.

One such type was boarding schools in which the state assumes all expenses involved in the maintenance of the children, except for small fees paid by wealthy parents. Good conditions were created in these schools for the

teaching and formation of the children. The term of study and curricula in these schools were similar to those in general incomplete and full secondary schools.

The need to organize such schools was due to two factors. First, in postwar years women became more busy, for they were being increasingly drawn into the various spheres of activity. This contributed to asserting women's equality, at the same time helping to solve the problem of a shortage of manpower due to war losses. Boarding schools had to ensure the education and upbringing of children whose parents, because of their busy working schedule, were unable to give them enough attention. Secondly, in the course of enlarging general schools there were many cases where children had to cover great distances to attend school. In these cases, children could be placed, if their parents so wished, in boarding schools.

These reasons also prompted the organization of schools and groups with a prolonged day. Here, too, curricula were similar to those in ordinary schools. These were predominantly eight-year schools where pupils were taken care of by teachers for the entire day, that is, from morning until 5 or 6 p.m. The pattern of work in these schools somewhat differed from that in ordinary schools: during the first half of the day there were classes as in all schools, whereas in the latter half teachers supervised pupils doing their homework and organized their rest and leisure. The schools of this type had only one shift. Children were given hot meals twice a day and those from poorer families received food at state expense.

The network of schools of both types was growing at a rather rapid pace in the republic. By the 1960-1961 school year there had been 37 boarding schools with 9,000 children. In that year the schools and groups with a prolonged day could take care of up to 6,700 children,[10] and five years later the number of pupils studying in 970 prolonged-day groups reached 71,000.[11]

During the period under review the network of general evening schools, including schools for adults, classes for working youth and correspondence schools expanded considerably. This is shown in Table 5.[12]

Table 5

GENERAL EVENING SCHOOLS IN AZERBAIJAN

Year	Number of Schools	Number of Pupils (thousands)	Including	
			in 1st-8th forms	in 9th-10th (11th) forms
1940/41	861	40	37	3
1945/46	264	17	14	3
1950/51	603	38	33	6
1955/56	656	48	36	12
1960/61	596	52	28	24
1965/66	1,296	106	27	79

Table 5 is significant in many respects. First, it reflects the main tendency in the development of the general school in Azerbaijan, that is, a positive increase in the number of pupils receiving incomplete and full secondary education. More and more boys and girls received secondary education in vocational technical schools. Secondly, attendance at evening schools had grown. In the 1945-1946 school year, the number of students in evening schools had reached only 3.5 per cent of the total number of pupils studying in day general schools, whereas, in the 1965-1966 school year, this figure rose to 10 per cent.

As a result of combined efforts aimed at increasing the various activities of the general school, it became possible during the 1950s to ensure a transition to compulsory incomplete secondary education (first seven-year and then eight-year schooling) in the republic. The proportion of students continuing their education in the eighth form increased. According to the 1955 school records, three-quarters of the children who had completed a seven-year school entered eighth form. The Azerbaijanian school now had an ever increasing number of pupils receiving full secondary education. Gradually, conditions were improving for the implementation of the next measure — transition to universal compulsory full secondary education. Moreover, this transition was effected in four big cities of Azerbaijan — Baku, Kirovabad, Stepanakert and Nakhichevan — in the 1950s.

The problem of the quality of teaching had been envisaged amongst the ones arising from the large increase in the network of general schools planned by the Soviet edu-

cational policy; however, the emphasis during the early postwar years was laid upon attracting all children to school and attaining a general rise in the educational level of the population. Also, despite the fact that education continued to retain its place of priority in the USSR development strategy, it was clear that financial, and especially manpower resources, were limited. In other words, a choice had to be made and priorities evaluated carefully. As a result, there was a certain discrepancy between the quantitative growth and the quality of teaching. The main reason for this was the war that had recently ended.

As quantitative aspects of the education problem were being solved it was necessary to gradually shift the emphasis and pay more attention to its qualitative aspects. This work aimed at improving the quality of teaching by following two courses:

1) Taking measures of a teaching and educational nature with a view to improving the process of study and strengthening discipline in school, in connection with the noted negative phenomena of pupils' misbehaviour, violations of the standards and regime of school life, truancy, failure to do homework, etc. The point was to develop and enforce new forms of education and upbringing in order to foster in pupils social responsibility and personal dignity as well as the will to learn. However, certain extremes in the methods of teaching and formation had to be overcome. Some teachers were not strict enough in their demands of pupils, contenting themselves with useless remonstrances and moralizing. Others, on the other hand, tended to follow education rigidly by deliberately lowering marks and giving punishment which was insulting to the student.

These and many other questions were being discussed at various levels, school and ministerial. Decisions were adopted both at all-Union and republican levels. Mention should be made of the introduction of "The Students' Code", and the decision to award gold and silver medals to secondary school graduates for excellent studies and exemplary behaviour, socialist emulation between forms and schools for attaining the highest achievements in studies. Of great importance was the proper organization of examination procedures. During the war it was decided to introduce graduation exams for those ending primary and seven-year

school, and school-leaving certificate exams for those graduating from full secondary school.

2) Measures to improve and renew curricula and textbooks. Much work in this field was conducted in the republic during the first half of the 1950s. In the 1955-1956 school year the school adopted new curricula and study plans which were more in line with the principles of the vocational concept of the school. The new curricula was a result of the task aimed at maintaining school as a general educational establishment which had to provide its pupils with the necessary knowledge for subsequent professional or vocational training, and for the training of personnel of high and medium skill and of workers. The new curricula increased the proportion of physics, mathematics and natural sciences by reducing the volume of humanities. The novelty was the introduction of technical training lessons in the 1st to 4th forms, practical training in workshops and on farms in the 5th to 7th forms and practical lessons on farming, engineering and electrical engineering in the 8th to 10th forms. The new curricula defined the minimum polytechnical knowledge which the secondary school was to give in the field of industrial and agricultural production.

c) Problems encountered in strengthening ties between school and daily life

The strengthening of the link between school and daily life, attracting school pupils to work, their formation by on-the-job experiences are a foundation of Soviet educational policy. From the very first days of its existence, the Soviet school has been constantly searching for new forms and methods capable of effectively solving this problem and depending for this on the changing socio-economic, scientific-technical and cultural conditions of society's development. As we have already mentioned, Azerbaijan accumulated considerable experience in this field during the war. It now had to gain during peacetime more experience and enrichment to adapt to changing conditions.

After the war, the Azerbaijanian economy, as well as the economy of the entire Soviet Union, began to be adjusted to the needs of peacetime. It was now possible to channel resources to the acceleration of economic development,

particularly in industrialization and the technical advancement of agriculture. Skilled workers were required for this purpose. The aim of the general school was not of course to give its pupils definite trades and professions. However, its graduates had to be prepared, to a certain extent, for entering independent careers, have proper technical knowledge and be professionally orientated. All the more so if one takes into account that a considerable number of young people, upon graduating from secondary school, do not go on to higher educational establishments, but go directly into a job. The school should provide them with knowledge and practical habits which will enable them to become fully fledged workers after a short trial period. This is what is meant by the slogan "to bring school closer to life".

Under the conditions of postwar years, especially during the 1950s, this problem acquired exceptional significance. This was connected, first of all, with the fact that the educational level of the republic's population had grown considerably, particularly that of the younger generation just beginning their working career. Secondly, in 1952 and 1953 boys and girls born on the eve of the war began to finish eight-year schooling. At the same time, children born in the first postwar years were entering school. Inasmuch as both these age groups were quite large, the school began to face serious problems, especially within the context of its search for new forms and methods with relation to its contacts with the socio-economic environment.

This situation was typical of the Soviet school, including the Azerbaijan school, during the 1950s. At the end of the decade, a number of important decisions were adopted, including one passed by the USSR Supreme Soviet on December 24, 1958 — Law on Strengthening the Link Between School and Life and on Developing the Public Education System in the USSR. A similar law was adopted in Azerbaijan and in all other Union republics comprising the USSR.

Let us examine the major aspects of the problem of the link between education and daily life which were posed in the documents mentioned, as well as the ways and means by which they were going to be tackled. However, before we begin to analyze them, it is necessary to note that subsequently, substantial changes were made in these docu-

ments, and in 1973, the USSR Supreme Soviet endorsed the Fundamentals of the Legislation of the USSR and Union Republics on Public Education—a major legislative act which is still valid, having annuled the one mentioned earlier. Nevertheless, we consider it necessary to familiarize the reader with some of the decisions adopted in the 1950s which played a significant role in the development of education in the Azerbaijan republic during this period. Finally, there is another point: the above-mentioned legislation dealt with all stages of education. Fundamentally an important reform was thus introduced into the entire system of public education. In this section we deal only with the general school.

1) The first group of measures concerned a certain re-organization of the structure of the general school and a rise in the level of compulsory education for young people. From then on, not seven-year, but eight-year schooling became the incomplete secondary general, technical and vocational school or, in other words, the first phase of secondary school. Accordingly, instead of seven-year compulsory schooling, universal compulsory eight-year schooling was introduced. The eight-year school was faced with the task "to give pupils a solid foundation of general and technical knowledge, foster a love for work and a readiness to be useful socially and to provide ethical, physical and artistic education of children".[13]

The introduction of compulsory eight-year schooling was not an end in itself. It corresponded to the fundamental principle of Soviet policy aimed at satisfying the social requirement for a constant rise in the population's educational level in socialist society. At the same time, this decision was in line with the demands of scientific and technical progress during that period. Important changes were taking place in the fundamental branches of the Azerbaijanian economy: mechanization, automation and chemicalization of production were rapidly developing and the latest achievements of science and technology were being widely introduced. All this, while changing the character of labour, required manpower with greater skill and higher general culture. General education of a higher quality, the ability of workers to handle the most complex types of machines and equipment were becoming the primary socio-cultural and

production requirements.

2) Another group of measures on the strengthening of the link between studies and work, the drive for the restructuring of the economy and technical progress, concerned polytechnical education in school and the professional orientation of pupils. The elaboration and implementation of these measures were necessitated by the fact that despite the achievements of the Soviet school, including those concerning the introduction of technical and vocational education, there were certain shortcomings in its organization and development. The legislation already mentioned stated that its main drawback was "a certain detachment from daily life and inadequate preparation of school graduates for practical work".[14]

These shortcomings could be explained, primarily, by the fact that for quite some time, due to a shortage of specialists in the country, the Soviet school was concentrated largely on preparing pupils for enrolment in higher educational institutions. In other words, emphasis was laid on the study of fundamental subjects, on theory, whereas questions of the practical application of the knowledge acquired in school were considered secondary. As for Soviet republics, including Azerbaijan, such choices were made due to the fact that in general there were very few young people with a secondary education whose knowledge was sufficient to qualify for studying at a higher educational institution. Meanwhile, it was precisely these republics that needed national specialists most. In the late 1950s, the situation improved so that school planning be reorganized with a view to countering this negative phenomena.

The task that faced the school was the following: to ensure that teaching and formation should be strictly in line with the principle of combining the study of the fundamentals of science, polytechnical training and the massive participation of school pupils in useful social work appropriate for their ages. As in any field, the theory was simple enough; the difficulty, however, lay in the ways and means of its implementation.

After prolonged discussions, the concept of a secondary general vocational technical school with professional training for industry emerged. What were the reasons for such a school and what tasks were to be undertaken? How

was production training to be organized within it?

This type of school should give its pupils a full secondary general and polytechnical education, as well as professional training sufficiently adequate for them to go into active work after graduation. The idea was not to make some changes in the general school by improving, for example, professional orientation, or increasing the number of vocational training lessons. The idea was to create a new type of school which would be able to ensure a combination of teaching with socially useful work and give young people the training that would make it possible for them to work in their chosen field. The graduates of this school retain the right to enter higher educational establishments.

In short, the concept of the secondary general vocational technical school presumes the organization of its teaching and training on the basis of the following criteria:

—each school of this type should have its own industrial "base", and will consequently be attached, by decision of the competent authorities, to a particular industrial enterprise, construction site, transport, or any other industrial organization. The decision also makes the enterprise (or organization) responsible for creating the conditions necessary for the efficient professional training and pupils' productive work (the setting-up of workshops, the elaboration with the school of plans and curricula of professional training, assignment of experienced engineers, agronomists and skilled workers for production training, etc.);

—in senior forms two-thirds of the study time are allotted to general and vocational disciplines, and one-third to production training and productive labour.

This is done in two stages.

—the first is initial production training on the corresponding sites provided by enterprises, organizations, collective and state farms for this purpose; after completing this stage pupils pass tests giving them the right to work independently;

—the second stage is completion of technical training for the trade done at the enterprises or other organizations and offices, attached for this purpose; this stage ends with exams and tests on the trades learned by pupils;

—special attention is paid to defining trades which are taught to boys and girls in secondary schools with industrial

training courses. The important thing is to make careful account of the local conditions and requirements for personnel;

—as for the methods of teaching, emphasis is laid on instilling in the pupils the ability to correctly learn the fundamentals of sciences, independence in theoretical and practical solutions to problems and tasks, conduct tests and experiments, use the latest computing techniques, etc.;

—responsibility is assumed not only by the enterprises, organizations and farms to ensure the normal functioning of schools with industrial training, but by the schools themselves, which enables them to propagate scientific and political knowledge among workers, office employees and collective farmers. The link between school and industry thus becomes a bilateral process, from which both partners stand to gain.

3) Finally, let us study only last group of measures adopted in the late 1950s, having the aim to provide work for young people terminating secondary schools of various types. These measures were designed to strengthen the tie between school and industry at a stage when its pupils started their working career. Two aspects of the problem were important during that period.

The first was psychological. We have already shown how the Soviet school for several decades had the task of preparing boys and girls for continuous studies at higher educational establishments. This resulted in a certain one-sidedness of teaching, in its somewhat abstract character, and in an isolation of school from daily life. Also this approach had a bad influence on boys and girls and nurtured their belief that the only acceptable path of life was continuation of studies and enrolment in higher educational institutions. They were not prepared to work in industry, on construction sites or farms. Moreover, they were reluctant to get a job after school, to acquire a trade or profession before carrying on with their studies. These were those who regarded physical labour as humiliating. These shortcomings in character formation seriously hampered the drawing of young school graduates into industrial and agricultural production.

The second aspect was organizational. It dealt with the process of planning, and more particularly the planned chan-

nelling of graduates from secondary general schools, especially those where there was no industrial and agricultural training, to plants, factories and farms. Here, the difficulty lay in the fact that many enterprises refused to give jobs to general school graduates because they did not want to burden themselves with the expense and responsibility involved in their training and adaptation to new working conditions. The problem became so serious that it required government action. In September 1957, the Central Committee of the CPSU and the USSR Council of Ministers adopted a decision on the integration of graduates of general school into industry. The decision made it the responsibility of republican and local bodies of power as well as factory managers to tackle the problem of providing jobs for the young people graduating from secondary general schools and training them in accordance with long-term and one-year plans drawn up by the State Planning Committee in conjunction with the Councils of Ministers of Union republics.

d) The training and upgrading of teachers

The training and upgrading of teachers is a constant problem facing educational policy. During the war and in the postwar period, this problem worsened; it was a key problem in the development of education in Azerbaijan and in the Soviet Union as a whole. One of the reasons was heavy losses in teaching personnel through military involvement. Despite the fact that the training of teachers continued during the war, in the first postwar school year (1945/46) their number in general schools dropped to 19,000, as against 22,000 in 1940. Another reason was the inadequate level of training of many teachers.

Both these factors—quantitative and qualitative—were the greater, the broader the development scale of education in Azerbaijan in postwar years. In other words, the training of teachers had to be carried on at an accelerated pace and at a high professional level.

To understand the complex problem of the training of teachers and the scope of the tasks facing the educational system in the republic, we give the following figures: By the beginning of the 1946-1947 school year, out of 21,900

school teachers 1,200, or 5.4 per cent of their total number, had no complete secondary education. By the end of the war, about 65 per cent of 5th to 7th form teachers and 59 per cent of 8th to 10th form teachers had an education which did not correspond to the pedagogical work they did.

How were these problems tackled in Azerbaijan?

Let us first look at how the training of teachers was organized in Azerbaijan, and in what educational establishments they studied.

In the early postwar years, there were teachers' training educational institutions of three types that corresponded to the three stages of education: for the second stage of secondary education, teachers were trained at pedagogical institutes with a four-year duration and at corresponding departments of universities; for the first stage, that is, for incomplete secondary schools—at teachers' training colleges with a two-year term of study; for primary schools—at teachers' training secondary schools.

In those years, teachers' training colleges were an intermediate form of training within the system of pedagogical educational establishments. A smaller volume of the subjects taught as compared with pedagogical institutes and pedagogical departments of universities made it possible to train teachers, especially those for work in the 5th to 7th forms, within a shorter period of time. In war years, and especially in postwar years, when the requirement for teachers became greater and the possibility of higher educational institutions to enrol many more students was limited, these teachers' training colleges ensured a more rapid personnel training. This was why enrolment grew sharply, especially in teachers' training colleges, during that period. In 1949, for example, pedagogical institutes enrolled 966 people, and teachers' training colleges 1,300 people.[15]

By the mid-1950s, the growing scope of the training of teachers in pedagogical institutes had made it possible to introduce changes in the structure of these educational institutions. Arising from the fact that the growing demands for highly qualified teachers for the secondary school could be met by higher pedagogical educational establishments, it was decided to close teachers' training colleges. Since then the training of teachers for the secondary general school has been concentrated in pedagogical institutes and in the

pedagogical departments of universities.

The changes in the structure of pedagogical educational establishments reflecting the need for highly qualified teachers and the acceleration and expansion of their training testifying to the steadily growing cultural and educational level of the population, took pride of place in the Soviet strategy of socio-economic and cultural development. They were reflected already in the first five-year plan for the restoration and development of Azerbaijan's economy for the years 1946-1950. It said, among other things: "To ensure enrolment, within the next five years of 12,100 people, in pedagogical institutions of higher education and in teachers' training secondary schools of 8,800 people. To aim for the upgrading of 6,300 teachers for the five-year period from pedagogical institutions of higher learning and 5,500 teachers from training schools."[16]

Subsequently, the rate of training of teachers for the general school never decreased. This made it possible to bring their numbers up to 57,000 in the 1965-1966 school year, as against 35,000 in the 1955-1956 school year and 22,000 in the year preceding the war. The number of teachers working in schools had thus grown considerably: now there were 18 pupils per teacher as compared to 30 before the war.[17]

Simultaneously, the professional qualifications of teachers greatly improved. This can be seen from Table 6.[18]

Table 6

EDUCATIONAL LEVEL OF TEACHERS IN GENERAL SCHOOLS OF AZERBAIJAN (by 1965-1966 school year)

Total number of teachers (thousands)	57
Education level percentage	
— Higher	45.1
— Incomplete higher	15.0
— Secondary pedagogical	35.2
— Secondary non-pedagogical (special and general)	4.1
— Incomplete secondary	0.6

Measures for the training and upgrading of teachers were accompanied by efforts aimed at raising the teachers' prestige in society. By a decision adopted in 1948, a pro-

cedure was established of issuing government awards to teachers with a long-service record and having done exemplary work. In 1949, teachers' salaries were raised and seniority bonuses and pensions increased.

As a result of these efforts the fluctuation of teachers decreased, their interest in their work grew and they remained longer in the same school than previously. Teachers with long experience now formed the bulk of the pedagogical staff. According to the data for the 1965-1966 school year, in the general schools of Azerbaijan one-sixth of all teachers had a 25 year length of service and more, and almost two-thirds had a record of 5 to 25 years of teaching. These are very high figures, testifying to a big rise in the quality of education and upbringing in the general school and also to a successful development of education in the republic.

e) Conclusions--Chapter II

The experience of the Azerbaijan republic in the development of education shows that even during a grim period of hardship when the country's destiny was at stake, public education still remained in the foreground. Its progress must be continuous so that its past achievements, as well as its future prospects may not be jeopardized. To make up for what has been lost, to correct mistakes and eliminate shortcomings is a difficult and subtle process. This is understandable, for education has to do with man, a living being whose formation and education takes decades. Also, the well-being of society itself depends on a population of professionally and morally educated people.

This main idea was firmly expressed in the educational policy of Soviet Azerbaijan during the war and postwar years. During the war period, the development of education continued uninterrupted and as planned, its priority was never questioned.

This can also be said about the immediate postwar period. The absolute priority given to education in the development strategy of the Azerbaijan republic was embodied in the will to achieve compulsory universal eight-year schooling for the growing generation and finally achieved in the late 1950s. This was a firm foundation for another

step forward — universalization of compulsory general education at the same level as that of the full secondary school curriculum—and an aim reached at a subsequent stage of the republic's development.

Of great importance also, was the varied and interesting experience acquired by the Azerbaijanian school during the period under review with regard to the strengthening of its ties with daily life and its reorientation of boys and girls capable and willing to use the knowledge they acquired not only for the continuation of their studies, but also for its application in their new jobs. It is worthwhile noting in this respect the concept of a secondary general vocational and technical school as well as the concrete aspects of the realization of this concept, the diversity and development of the forms and methods of the ties between school and daily life, with businesses, offices, etc.

Another important trend to be mentioned in the development of education is the training of teachers, especially the republic's orientation towards a simultaneous solution of the quantitative and qualitative aspects of this problem. The connection between these two aspects and the fact that they are especially important in the training of teachers is indispensable for maintaining a high level of educational work in school.

On the whole, the Azerbaijan republic had undergone great changes for the development of public education during the quarter century, from 1941 until the mid-1960s. As a result, requisites and conditions were created for its subsequent transfer to a qualitatively new stage, in line with the further socio-economic progress of the Soviet Union.

[1] Newspaper, *Bakinsky Rabochy*, December 26, 1942.
[2] Newspaper, *Pravda*, March 24, 1942.
[3] Archives of the Institute of History of the Communist Party of Azerbaijan.
[4] Ibid.
[5] Magazine, *The Azerbaijan School*, No. 2-3, 1945, pp. 12-13 (in Azerbaijanian).
[6] *Azerbaijan in Figures. Statistical Survey*, Baku, 1964, p. 40.
[7] *Azerbaijan in Figures. Statistical Survey*, p. 257.
[8] *Public Education, Science and Culture in the USSR*, pp. 48-49.
[9] Ibid., pp. 60-61.

[10] *Public Education, Science and Culture of the Azerbaijan SSR, Statistical Survey*, Baku, 1968, p. 56.
[11] *Public Education, Science and Culture in the USSR*, p. 84.
[12] Ibid., p. 116.
[13] *Public Education in the USSR. Collection of Documents, 1917-1973*, p. 56.
[14] *Public Education in the USSR. Collection of Documents, 1917-1973*, p. 55.
[15] Central State Archives of the October Revolution of the USSR.
[16] *Law on the Five-Year Plan of Restoration and Development of the Economy of the Azerbaijan SSR for 1946-1950*, Baku, 1946, p.68.
[17] *Public Education, Science and Culture in the USSR*, p. 49.
[18] Ibid., p. 100.

Chapter III

CREATION OF A NATIONAL TRAINING SYSTEM

Each society needs its own intelligentsia fulfilling precise social and cultural functions which cannot be done by other sections and classes. Society creates the intelligentsia in its own image, that is to say, a social stratum which would correspond to its ideals and political interests.

This is especially true of the countries undergoing a transitionary period of development from one socio-political system to another, for example, from the colonial regime to political independence, or from feudalism — by-passing capitalism — to a society based on socialist foundations. In these countries much has to be started from scratch, because the intelligentsia there is generally a very minor one. This is why, to augment its ranks is a matter of primary importance. The most important point therefore, is to form a new intelligentsia, new in its social structure and ideological-political essence, that is, a working intelligentsia comprised from among the peasant population and working classes.

The formation of an intelligentsia is a bigger and more complex problem than the training of highly skilled specialists which, despite its importance, is of a smaller nature. In other words, the training of specialists for national economy and culture bears no similarity to that of the formation of the national intelligentsia; it is only one of its aspects.

In its initial development stage, Soviet Azerbaijan could be included in this group of countries having a transitional nature. This is why in this chapter the training of Azerbaijanian national specialists is considered within the context of the above-mentioned general idea and its connection with

the problem of the formation of the national intelligentsia. In turn, this concept should be regarded as one aspect of the policy of a socialist state in the nationalities question, whose principles determined the ways and methods of the formation of the intelligentsia in Soviet republics.

a) The formation of intelligentsia in a multinational state

The world's first socialist state emerged as a multinational state, and the voluntary alliance of the dozens of nations and nationalities populating it. This meant that not a single problem directly concerning the Union republics of the USSR could be solved without a clearcut national policy pursued to conclusion. The training of highly-skilled personnel, and in general, the formation of the national intelligentsia in these republics was one of such problems.

How was the process of the formation of the national intelligentsia carried out in Azerbaijan? To understand it correctly one should consider it as part and parcel of the nationalities question. This is all the more true, inasmuch as Azerbaijan itself is a multinational republic inhabited by 30 different nationalities.

To ensure equality of socio-economic, political and cultural rights, relationships within the republic as well as the republic's equality within the entire Soviet state, such was the dual task which faced Soviet power from the very first days of its existence. How was the nationalities question, "one of the most acute and dramatic problems within history",[1] as G. A. Aliev, an outstanding government and party leader, aptly put it, to be solved? What place does the formation of the intelligentsia occupy in its solution? This was not an easy task, especially as history provided no examples of any genuine solution.

Historical experience proved that for centuries differences of opinion between peoples had been used to sow distrust and enmity between them to set them against one another so as to better dominate them and gain their submission. The national policies of socio-political regimes that varied over the centuries were precisely these. It was not surprising that this question assumed an even greater and dramatic conflicting character and sometimes even led to bloodshed.

Pre-revolutionary Azerbaijan had repeatedly suffered from terrible internal conflicts. National prejudices forced on the peoples were a strong heritage of the past which Soviet Azerbaijan had to overcome. This was indispensable, although not the unique condition for solving the nationalities question on a socialist basis. National prejudices, backward tendencies and habits, religious superstitions — all had to disappear along with inequality between nations in the economic, socio-political and cultural respects. This was not an automatic process; strong efforts were required in the implementation of the unique national policy of the Soviet state.

The principle of this policy was formulated in a historic document of the Great October Socialist Revolution, an appeal to all working Moslems of Russia and the East. It said, in essence: "Lead your national life freely and unhindered. You have a right to this. Your rights, just as the rights of all the Russian peoples, are protected by the mighty revolution and its bodies, the Soviets of Workers', Soldiers' and Peasants' Deputies."

The national policy of the young Soviet State was based on the following major principles.

1. Economically, this meant a well-balanced and progressive industrialization: not a single economic region, especially a national one, should expand at the expense and to the detriment of any other region or national territory. The division of labour on a nationwide scale naturally took into account local conditions and resources, but it was subordinated to a fundamental aim: to put an end to the flagrant disparity in economic development of various regions, overcome the retardment of former national marginal zones and increase their development levels by aligning them with those of advanced regions. Such an approach should ultimately lead to the creation of a single economic mechanism within the framework of the entire Soviet state and be the basis for strong economic ties between nations and nationalities.

Soviet Azerbaijan was a good working ground for the implementation of this principle both in industry and agriculture. Rich natural resources, oil especially, created a firm base for all-round industrialization and the establishment of multiple ties with other Soviet republics. Favourable climat-

ic conditions offered many possibilities regarding the development of technically-equipped agriculture which would create good opportunities for the republic's participation, in various ways, in the division of labour at a Union level.

During this period, however, there was still a question of the republic's potentialities. In future chapters, we shall describe how these potentials were exploited and how the economic pattern of Azerbaijan changed beyond recognition. We shall simply note here that these changes were a consequence of the Soviet state's national policy.

2. Socially and politically, it was the creation of the state and legal structures ensuring the sovereignty of Soviet republics and the equal rights of all peoples in governing the state. The aim was to unite them in a single community capable of guaranteeing their national, state and political interests. That was the idea unheard of in the past for formation of a new historical community, the Soviet people, emerged and developed as a general trend. This community embodies all that is common to the peoples and nationalities of the Soviet Union which, at the same time, retain their original national traits and particular historical and cultural features.

Soviet Azerbaijan is a vivid example of the success of the nationalities question. It was the first workers' and peasants' state in the East that received sovereign national rights as a result of the October Revolution. From the very first days of its existence, Soviet Azerbaijan had been in favour of uniting all Soviet peoples in a single state, the Union of Soviet Socialist Republics. This reflected their belief that only by such a union could Azerbaijan, as well as other Soviet republics, ensure its national sovereignty and advance from a retarded, semi-feudal society to a socialist one.

3. On the cultural side, conditions were created for national cultures to flourish, for them to be mutually enriching through continuous exchanges and to thus acquire a new socialist content and develop as socialist cultures while retaining their own particular national traits.

Miltinational Azerbaijan was of special interest for the implementation of this principle of the nationalities question — the revival of national cultures and their establishment and interpenetration on a socialist basis without renouncing

the national forms particular to them. The ties with Russian culture and its worthy representatives and the fraternal assistance given by the Russian people, played a great role in the renaissance of Azerbaijanian culture. This process had nothing to do with the so-called russification — one story put about by some foreign "specialists". The results of the cultural revolution in Azerbaijan were so staggering, its national culture during the 60-odd years of the existence of Soviet Azerbaijan having made such a big leap forward that to talk about "russification" one must have a really sad imagination.

In conclusion, it can be said that one of the aims in the solution of the nationalities question was the formation of the intelligentsia in each national republic. At the same time, the intelligentsia itself had to play the primary role in the implementation of the basic principles of the nationalities question. In other words, as well as its formation, the national intelligentsia had to contribute to the activities aimed at the cultural revival of every nation and nationality of the Soviet Union.

The formation of national intelligentsia during a time of transition in society is a multiform and sometimes contradictory process. This section deals with only two of its aspects: the first, Soviet Azerbaijan's attitude to the old pre-revolutionary intelligentsia; the second, the training of personnel to renew the intelligentsia being formed in the republic, which had to propagate both national cultural traditions and socialist ideals in society.

Whilst discussing the first aspect we should mention first of all that the small Azerbaijanian intelligentsia that had formed during the pre-revolutionary period had displayed varying opinions on the October Revolution and the establishment of Soviet power in the republic. The most advanced sections of the old intelligentsia welcomed these radical socio-political changes in the life of the people. Another part of it remained in the other camp. The largest part of the old intelligentsia could not define its socio-political stand immediately. It was not merely delaying tactics, but also the honest desire to understand what was going on, to thoroughly comprehend the essence of revolutionary transformations and to complete its difficult search for a place in a rapidly developing society.

The policy of Soviet Azerbaijan on the question of the formation of national intelligentsia took into account the factors we have mentioned. It proceeded from the need to fight for the sincere, but hesitant group of the intelligentsia, to make it side with the revolution and the socialist future of the republic and to use its knowledge and experience. It was greatly needed in the construction of a new Azerbaijan.

This heterogeneity of the old intelligentsia that had received an education prior to the establishment of Soviet power in Azerbaijan and had been formed in the socio-political conditions of tzarism, together with the local feudal upper crust, breeded complex, sometimes contradictory relations with the new authorities. What policy had to be adopted with regard to the pre-revolutionary intelligentsia? There could be no simple answer, for there were no simple questions.

The struggle to gain the intelligentsia is determined by the role this social group plays in society and the importance of the historical mission performed by intellectuals in socio-economic and cultural progress. In this connection and of great significance, are a number of Lenin's precepts giving the characteristics of the intelligentsia as a social stratum and the contradictory aspects of its behaviour, especially during the periods of changes in social relations. In the formation of its national intelligentsia, Soviet Azerbaijan was guided by Lenin's precepts which provided the key to understanding and solving the nationalities question and using the intelligentsia in socio-economic and cultural progress.

Speaking about the role of the intelligentsia, particularly that of scientists, engineers and other specialists in the construction of socialist society, Lenin emphasized: "We must take all its science, technology, knowledge and art. Without these we shall be unable to build communist society. But this science, technology and art are in the hands and in the heads of the experts."[2] The leader of the Soviet state repeatedly dealt with this question. He wrote that "...we need far, far more engineers, agronomists, technicians and scientifically trained specialists of every kind than were needed before".[3] And again: "We cannot dispense with the advice and knowledge of educated people, intellectuals

and specialists."[4]

With due account taken of the important socio-historical mission of persons doing intellectual work, Lenin devised the general course to be followed with regard to the old bourgeois intelligentsia. "Unless our leading bodies, i.e., the Communist Party, the Soviet government and the trade unions, guard as the apple of their eye every specialist who does his work conscientiously and loves it — even though the ideas of communism are totally alien to him — it will be useless to expect any serious progress in socialist construction."[5]

These words were all the more significant because highly-skilled specialists were rare. This directly concerned Soviet Azerbaijan which had to pursue an especially cautious policy toward the old intelligentsia.

Despite the importance of the rational use of the knowledge and experience of available specialists, the principal effort however, had to be directed towards another second aspect of the problem — the establishment of a system for training specialists. Soviet Azerbaijan encountered numerous difficulties and obstacles in this respect, although they were of a somewhat different character. The future of the republic's socio-economic, scientific, technical and cultural progress depended, above all, on whether it would be possible to begin the training of highly qualified specialists ready to make their contribution to the building of a new society

The question of the training of national personnel was new for Soviet Azerbaijan, as were many other questions of its cultural advancement. At the same time, an important factor in favour of this should be mentioned, one that played the decisive role in solving this question in Azerbaijan, namely, assistance from Soviet Russia. This assistance was of an all-round character, that is to say, it touched on literally all aspects of the training of high-level Azerbaijanian personnel: the financial resources, the organization of management, the dispatch of scientists and specialists, the elaboration of syllabuses, textbooks, manuals and other teaching aids.

The establishment of close contacts with other Soviet republics, primarily with the RSFSR, in all spheres of the socialist construction made it possible to tackle jointly

many urgent questions concerning the development of culture. Following the formation of the USSR in 1922 these contacts considerably strengthened, their forms and implementation became more concrete, and the economic foundation of co-operation between the Soviet peoples was determined.

The following fact is worthy of attention: it characterizes the contribution of the RSFSR to the strengthening of the material and technical basis of the system of higher and specialized secondary education being set up in the republic. In 1922, when Soviet power experienced enormous difficulties caused by the imperialist intervention, the Civil War and economic chaos, the government of Soviet Russia still deemed it possible to appropriate 10,000 golden roubles from its budget to the development of higher education in Azerbaijan.[6] That was a large sum for the time. That very year, Petrograd sent to Azerbaijanian University more than three tons of books, including all studies published by the Russian Academy of Sciences.[7] By a decision of the Presidium of the Central Executive Committee of the USSR of August 10, 1923, the Polytechnical Institute in Azerbaijan was sent the equipment belonging to one of the RSFSR polytechnical secondary schools.[8]

Quite a few examples of this type can be cited. In each case, assistance was free of charge and done unselfishly which greatly facilitated the development of a system of higher and specialized secondary education in the republic. This was all the more valuable, inasmuch as Soviet Azerbaijan could not expect assistance from elsewhere.

What was quite novel in the relations between the young republic and Soviet Russia was the fact that they were the relations of a former metropolitan country with a former backward national outpost. It is because of this that Nariman Narimanov said. "Azerbaijan cannot exist without Russia... The future happiness of Azerbaijan depends upon Russia."[9] These words could apply to any Soviet Republic. Soviet Russia established relations of a new type between peoples based on friendship, good neighbourly relations, unselfishness with respect for sovereignty and national traits and the flourishing of national cultures.

This new type of relations is part of the very nature of peoples' national cultures and their desire to exchange ex-

perience and achievements, observe each other for the purpose of a better understanding, familiarity and co-operation. These features are typical of both Russian and Transcaucasian, particularly Azerbaijanian, cultures. For many centuries worthy representatives of the Russian and Azerbaijanian peoples had showed progressive tendencies characterizing the bringing together of peoples and their cultures. These ideas were artistically expressed in works by the great Azerbaijanian poet Nizami. They were emphasized by the outstanding representative of Azerbaijanian culture in the last century, Mirza Fatali Akhundov. There were others such as Bakikhanov, Sabir, Mamedkulizade, Seid-Azim Shirvani who also contributed to the development of these progressive traditions.

In turn, great Russian scholars, poets and writers showed interest in original Azerbaijanian culture; they studied it and propagated it. Let us name Pushkin, Lermontov and Griboyedov who highly valued Transcaucasian and Azerbaijanian cultures. The outstanding Russian literary critic V. G. Belinsky aptly remarked on the cultural and propaganda activity of Pushkin who lauded the spirit of friendship and kinship displayed by the Russian people toward the Caucasian peoples. "Following Pushkin's example, the Caucasus became for the Russians a cherished land, a land of wide freedom and inexhaustible poetry, a country seething with life and wild dreams. Pushkin's muse enhanced Russia's close relations with this land, a relationship which had existed for years." These words could also be attributed to all representatives of progressive Russian culture.

The principles formulated by the Soviet state for a solution to the nationalities question reflected progressive, democratic traditions of national cultures. The formation of national intelligentsia in Azerbaijan was based on these traditions. In turn, educated people who joined its ranks, were called upon to develop and strengthen them and give a socialist content to national cultures. They were, as a result, active figures in the new world of socialism, fully realizing the importance of participating in the strengthening of that world and its socio-economic and cultural progress.

b) Creation of a system of training of national personnel

Before starting on a detailed analysis of the subject and its various aspects, we shall cite two figures: before the establishment of Soviet power in Azerbaijan, there were only 62 persons with a higher education whereas 20 years later the republic's economy employed about 20,000 specialists having a higher education level. During the first years of Soviet Azerbaijan's existence, it was almost impossible to imagine this successful achievement in such a short time.

These figures are not cited in order to stagger the reader's imagination. The aim is to show how the republic succeeded in achieving these results which would have seemed Utopian, had there not been documentary and concrete evidence.

One of the fundamental factors of a general political nature that made for a speedy development of public education in Soviet Azerbaijan has already been mentioned. In the strategy of socio-economic and cultural advancement, education holds a permanent place of primary importance. This is true of the entire system of Soviet education, including the training of skilled specialists. In other words, the priority of education is not a temporary phenomenon, but a long-term strategic principle. We have also noted the positive effect of assistance on the part of Soviet Russia.

It should also be emphasized that in order to define the long-term development prospects of such important spheres as public education and with a view to implementing policy in this field, there should be a general concept and clear-cut principle determining the character of its progress and the methods used to tackle the ensuing problems. Only on such a basis, planned beforehand, could one expect successful achievement of the aims formulated by the adopted policy. We consider it necessary to emphasize this methodical requirement for solutions to concrete problems which are quite often hampered by the lack of a clear understanding of the general conception of the solution.

Soviet Azerbaijan owes its successes to the fact that it has always adhered to the methodical concept mentioned. This is shown by the first decrees of the Azerbaijan Revolutionary Committee in May 1920, which attempted to use

some of the experience gained in the revolutionary transformations in the field of public education implemented in the young Soviet state and adapt the principles it advocated to the conditions prevailing in Azerbaijan.

Having made a note of all this, we shall now look at some concrete trends of the foundation laid to the system of high-level personnel training in Soviet Azerbaijan which had attracted the attention of the new regime in the first stages of the socialist transformations.

Under the difficult conditions of those times, each task became a complex problem. The difficulty lay in the fact that it was necessary to solve them simultaneously, not consecutively. In other words, a systematic approach was required, for all these tasks were one, they were elements of a system and could not be separated. Meanwhile, manpower resources, that is to say, scientific and teaching personnel to ensure the educational process, as well as the financial resources were rather scarce. The fundamental principle of the Statement of the People's Commissar of Education on October 29, 1917 also applied to Soviet Azerbaijan. The statement said: "Regardless of how other items in the national budget would be curtailed financially, expenditures for public education should remain high: a generous budget for education is a matter of pride and glory for any nation. The free and sovereign peoples of Russia will never forget it."[10] Nevertheless, financial resources were lacking. The young Soviet state, while tackling major economic problems, was unable to meet the material requirements of the secondary educational establishments and specialized secondary technical schools with the state budget. In view of this it was urgent to use the resources and means provided by various businesses and offices for the training of highly skilled specialists. This practice was quite widespread during the 1920s-1930s.

In 1920, already, by a decision of the 2nd Azerbaijan Congress of Soviets, some departments of Baku University and Polytechnical Institute were transferred to various ministries and other government agencies: the medical department of the University to the People's Commissariat of Public Health, the engineering and economic department of the Polytechnical Institute to the economic council of the republic, the oil department to the Azneft trust,

and the agricultural department to the People's Commissariat of Agriculture. At the end of the 1920s and early 1930s, when the country started upon the enormous programmes of the first five-year plan period and when the possibilities of financing the considerably enlarged network of higher and secondary specialized educational establishments from the state budget was still insufficient, the practice of transferring institutes and technical schools to the corresponding departments, became more widespread.

The state budget, as well as the financial means of certain departments were in those years the main source of providing material backing to the needs of specialized education.

The acquisition of means from various sources made it possible to increase financial backing for the needs of higher and secondary specialized education and provide the material foundations of the system for the training of highly skilled specialists in the republic. A similar policy was pursued in all the formerly underdeveloped outlying ethnic areas of the country. This could be seen by the example of the three Transcaucasian republics: Azerbaijan, Armenia and Georgia. Their annual budgets for higher education were as follows: in 1927—3.8 million roubles and in 1940, 144.3 million roubles. In 12 years, the allocation to these three republics had multiplied 38 times, whereas the figure for the whole of the USSR was 28.

Buildings for educational centres were being erected at a rapid pace, the network of laboratories was expanding, and the research and teaching equipment needed was acquired. Special attention was paid to the republic's two leading centres of higher education: the Azerbaijan State University and the Polytechnical Institute. Back in 1922 the 2nd Azerbaijan Congress of Soviets wrote in its resolutions: "Taking into account the urgent need of Azerbaijan for highly skilled specialists in all branches of the economy and public enterprises, it is necessary to support, consolidate and develop in every way possible the two higher educational establishments in the Azerbaijanian republic, namely, the State University and the Polytechnical Institute."[11]

The efforts undertaken for the implementation of the above decisions enabled the University to quickly become a training centre of highly skilled specialists. By 1928 it had

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six departments: physics and mathematics, medical, Oriental studies, social sciences, pedagogical and law. The number of campus faculties had also increased. At the end of the 1920s, the University was housed in three buildings. Big sums were spent on buying equipment and teaching aids. During the 1926/27 and 1928/29 academic years 137,000 gold roubles were spent on buying equipment and teaching aids for the University.[12] A well equipped library was established. In the early 1920s it contained only 4,660 works but afterwards its selection of books began to increase rapidly. A large consignment of books, amounting to the sum of 120,000 roubles was acquired. In 1922, the People's Commissariat of Public Education of the Azerbaijan republic appropriated 7,000 gold roubles for buying over 2,000 books in Istanbul needed for the new Oriental Studies department of the University. In 1928-1929, a valuable collection of the former Baku French Society numbering about 1,000 volumes was turned over to the University.[13] By 1930, the book stock of the University library was more than 100,000 volumes.[14]

The material and technical base of the Polytechnical Institute, created in 1921 on the basis of the Baku technical school, also strengthened. It numbered five departments: oil-production, electrical engineering, construction engineering, agricultural and economic.

In 1930, the new Institute building was opened. The Institute's budget was increasing yearly. In the 1926/27 academic year it amounted to 403,800 roubles, whereas in 1929/30 it had grown to 1,248,000 roubles.[15]

It is of interest to note that in the field of higher education, Soviet Azerbaijan did not confine itself to creating educational establishments training specialists for the national economy only. Much attention was devoted to artistic and aesthetic education. In 1921, on the initiative of the founder of Azerbaijanian classical music, Uzeir Gajibekov, the Azerbaijanian State Conservatoire was founded with five departments: piano, vocal, orchestral, theory and composition and Eastern music. The Conservatoire was the first of its kind in the East. In 1921, Higher School of Art was also opened.

There is no need to dwell in detail on how other institutions of higher learning were organized. We shall merely

say that their network gradually included new fields of knowledge and was able to better satisfy the requirements of the economy and society as a whole. During a period of 20 years, it had increased to 16 higher educational establishments.

Simultaneously, a network of secondary specialized educational establishments was set up and expanded. In Baku, Gyanja, Kazakha, Nukha and Shusha, teachers' seminaries were started. In the 1920-1921 school year, there were only eight specialized secondary educational establishments, whereas in the 1927-1928 school year their number increased to 37, and by the 1940-1941 school year, 91 such institutions were functioning.

The rapid growth of the network of educational establishments which trained future specialists for higher and secondary specialized education, had to be accompanied by the corresponding efforts to train scientific and teaching personnel for them. That was one of the most complex and urgent tasks for those in charge of educational policy, and, above all, for the People's Commissariat of Public Education of the republic which was entrusted with supervising the system of higher and secondary specialized education.

During that period the situation of scientific and teaching personnel for higher and secondary specialized educational establishments could be called a "vicious circle". Teachers were needed for the training of future teachers, but there were too few of them. This "vicious circle" however, had to be broken, solutions could not be deferred, for the republic's economic, scientific, technical and cultural progress was at stake.

The training of scientific and teaching personnel and the organization of the entire teaching process in higher educational institutions within the republic clearly illustrated the importance of the principle advanced by the October Revolution: assistance to backward regions on the part of developed ones. Leading figures of science from Moscow, Leningrad and other large centres of the country travelled to Soviet Azerbaijan to lay the foundation for the training of specialists and scientific and pedagogical workers in the republic; and indeed they did train the first batch of young scientists—representatives of the Azerbaijanian national intelligentsia. Many of the teachers and scientists who had

come to Azerbaijan to render help on the spot remained there forever, having become organizers and heads of higher and secondary specialized educational institutions set up there and devoted themselves entirely to the national renaissance of Azerbaijan. Just one example is the outstanding Russian scientist Ivan Gubkin, the founder of Soviet oil geology, who played a great role in the founding and supervision of the Azerbaijan Academy of Sciences. Ivan Gubkin said: "Azerbaijan is my second homeland and I cherish it as I do the land of my parents—Russia."

Among the first teachers and instructors at higher and secondary specialized educational institutions were representatives of the national intelligentsia who had received education in colleges and universities of pre-revolutionary Russia and foreign countries. Their number however was very small. But those of them, who began to work with sincerity and enthusiasm in educational institutions of Azerbaijan, have made an invaluable contribution to the development of higher and secondary specialized education in the republic and the training of specialists and teachers.

Of great benefit to the organizing of the work of higher and secondary specialized educational institutions was the participation of specialists from the industrial sector and government and public organizations. This contributed to the strengthening of ties between educational institutions and industry, between theory and practice of socialist construction.

The efforts of scientists at leading higher educational establishments in large cities of the Soviet Union and the growing possibilities available within the republic made it possible within the very first years of the establishment of Soviet power in Azerbaijan to provide teachers and instructors for its institutions of higher learning. It was necessary to establish the training of scientific workers and teachers on a firm, permanent basis.

The search for ways to implement this training had two aims: professional and socio-political. The idea was first, to fill the ranks of scientific workers and teachers with highly-qualified personnel. Naturally, without that it was impossible to guarantee a better quality in the training of future specialists.

Secondly, the educational system of the new society re-

quired not only well-trained teachers, but also people convinced of the validity of the ideas of socialism, capable of convincing the student audiences of this and help form a younger generation loyal to socialist ideology. At that time, however, many teachers had insufficient knowledge on many aspects of socialist processes and were influenced by the ideology of the old, pre-revolutionary society. But the interests of the republic's socio-political and economic and cultural development demanded that in forming the conceptions of the new generation of specialists within the precincts of institutes and technical schools the final word belonged to teachers who adhered to the ideals of the new society and who were, through their convictions and social origin, true representatives of the socialist working intelligentsia.

The postgraduate courses organized in the latter half of the 1920s served these aims. They began to be created in institutes and the universities as of 1926. The training of specialists in the system of postgraduate courses involved research work on a particular subject studied there and the presentation of a scientific thesis. After public acceptance of a thesis, the postgraduate student is awarded the title "candidate of sciences". The term of study of the postgraduate course is three years. Along with scientific research, the postgraduate student takes a course on fundamental socio-political sciences. He also has to take part in public activity.

Gradually, the postgraduate courses expanded the scope of their activities. They became a part of all leading educational establishments and also opened up in scientific-research institutes. For instance, when the Azerbaijanian state scientific-research institute was set up in 1929, postgraduate courses were envisaged.

The postgraduate courses have become an effective way of training scientific-research workers and highly qualified teachers. The number of postgraduate students was growing with every passing year and, what is especially important, more and more people successfully completed their studies and presented theses. Unfortunately, we do not have any exact data on the number of postgraduate course graduates in the Azerbaijan republic during the period under review. Some idea can be got however from data on certain years

in some institutes. During the 1939-1940 academic year, there were 100 postgraduate students in Baku University and 80 in the Industrial Institute. During the 1934-1940 period, 42 postgraduate students had completed their studies and presented theses in the Azerbaijanian Pedagogical Institute; during the 1938-1940 period, 41 theses were presented in Baku University. During the 1939-1940 academic year, 1,933 teachers and instructors worked in Azerbaijanian schools of higher learning, that is to say, 3.4 times more than in the 1927-1928 school year.[16] These data show rapid changes in this important sphere.

The combined efforts for the solution to the three basic requirements of a higher education — the mobilization of financial resources, the expansion of the network of educational institutions and the training of scientific and teaching personnel — was fruitful: the number of students increased and the republic's economy began to receive the specialists it required. It took Soviet Azerbaijan only two decades to lay the foundation of its system of higher and secondary specialized education, and then to place it on a firm base of modern scientific and technical achievements. Table 7 gives some idea of its development.

Table 7

DEVELOPMENT OF HIGHER AND SECONDARY SPECIALIZED EDUCATION IN AZERBAIJAN (at the beginning of the 1940/41 school year)[17]

	Higher Education	Secondary Specialized Education
Number of educational establishments	16	91
Number of students	14,600	17,400
Number of students per 10,000 inhabitants	44	52

As a comparison, it should be noted that the average number of students per 10,000 inhabitants across the whole

Soviet Union was 41 and 50 respectively. Thus, we see that in two decades, Soviet Azerbaijan had overtaken the country's average rate of progression in this sector.

c) Workers' faculties and the continued training of specialists

The search for new forms and methods for training highly-skilled specialists was closely connected with the main problem concerning the entire system of public education and which was to radically change its social and national structure in favour of the working classes and the Azerbaijanian population. Naturally, this search was also due to the fact that during the formation period of higher and secondary specialized education in the Azerbaijan republic, preference was given to such forms and methods which could ensure a rapid training of specialists.

Despite the fact that these questions cannot be separated, this section is devoted to one of them only. The problem of the democratization of higher and specialized secondary education will be examined after an analysis of the forms and methods of the training of specialists.

During the period under review (the first two decades of the existence of Soviet Azerbaijan) the same educational establishments frequently trained specialists of different levels: workers, technicians having a secondary education and specialists with a higher education. This can be explained by the fact that, first, many problems at the time were common to all levels of training and it was necessary to discuss and settle them together. Such an approach was all the more necessary for co-ordinating numerous measures and concentrating on the most important. Secondly, a shortage of educational establishments and a poor technical and material base, and the lack of scientific and teaching personnel limited the possibilities of expansion. It was necessary to reflect not only on the expansion possibilities, but especially on the utilization of available facilities.

One of the most interesting innovations to result from the revolutionary creative efforts of Soviet power in the sphere of public education and which retains its importance as a form of the rapid training of specialists to this very day, was the setting up of the so-called workers' faculties. This innovation was prompted by the fact that in a vast country,

especially in its formerly underdeveloped outlying ethnic areas such as Azerbaijan, there were few people whose educational level would permit them to continue their studies in a higher or a secondary specialized educational institution. Meanwhile, there was a large requirement for such people. The workers' faculties were thought to provide the solution to the problem under the prevailing conditions. They represented a special organizational-pedagogical and socio-political form of study which was aimed at giving, in a short space of time, the knowledge necessary for studies at a university or institute. The student body of these faculties consisted of representatives of the working class and the peasantry.

The first workers' faculty in the Soviet state came into being in February 1919. Several months later — in September 1920 — the Council of People's Commissars of the RSFSR published a decree signed by Lenin, Workers' Faculties, which laid an institutional foundation for them on a national scale.

Soviet Russia's experience was put to profit in Azerbaijan. Thus, the Azerbaijan Revolutionary Committee issued a decree, on December 1, 1920, on the organization of workers' faculties in the republic. The decree played a major role in the training of national intelligentsia having provided an important channel through which to insure its democratic nature, the origins of its members being working classes.

The first workers' faculty in Azerbaijan opened at Baku University in December 1920. It had various outside centres, including one at the Lenin Factory. The experience it accumulated permitted the faculty to elaborate and adopt its Rules in July 1922, whose main provisions give an idea as to the characteristic features of this form of teaching and training of personnel.[18]

The Rules emphasized the need to maintain the high prestige of the workers' faculty. It was granted similar rights as those enjoyed by the main departments of the university. The statutes of the students and teachers of the workers' faculty were also defined. All the university laboratories, its study rooms, equipment, teaching aids, etc. were placed at their disposal. Students who finished this course were given priority for enrolment in all higher educational establishments of the republic without taking exams.

The term of study at the workers' faculty was four years. However, this could be curtailed for particularly bright students.

The requirements needed to enter the workers' faculty were fairly elementary, the ability to read and write correctly, the knowledge of elementary arithmetic, a participation of no less than one year as a worker in industry and be aged 18 at least.

The workers' faculties had to be advertized. At the same time, considering the extremely low living standards of the working people, students of workers' faculties had to be provided with some material benefits. Many of them had to attend evening classes, combining work with studies. This was why their working conditions had to be eased. A special decree of the Council of People's Commissars of the Azerbaijan republic, The Privileges of Students of Workers' Faculties, Professional and Vocational Courses and Schools of Literacy, adopted in March 1922 dealt with these questions.[19]

In accordance with this decree, the duration of a workday was reduced by two hours for the first to fourth term students who did manual work. They were also exempt from any overtime. The wages and salaries received by students in workers' faculties were not reduced in any way. Study time at workers' faculties was considered as overtime and compensated for at a favourable rate of pay. As for fifth and sixth term students, they were entirely exempt from work, receiving an average monthly wage corresponding to their trade and skill.

All expenses involved in the study at workers' faculties were borne by the People's Commissariat of Public Education as well as businesses and offices that sent their workers to study. Businesses and other organizations had a special fund used for this purpose, and the People's Commissariat of Public Education asked for special credit to finance studies.

Workers' faculties were the centre of attention. A statement to Baku workers said: "Knowledge — an instrument of culture — acquires a profound meaning at this present time when we are moving from having defended the revolution at the Civil War front to the struggle on the pacifist front of labour against devastation, hunger and cold. It is

a time for revolutionary creation and the construction of new ways of life. It must never be forgotten that the fruits of the revolution are firmly consolidated not only by military victories, but also by the scientific, socialist consciousness of the architects and builders of this new life."[20]

Workers' faculties enrolled the most advanced and better trained workers and peasants. Experienced teachers, the enthusiasm, perseverance and thirst for knowledge of students in workers' faculties, triumphed over all difficulties.

The number of students and the network of workers' faculties was growing with every passing year. Besides Baku, they were opened in other cities of the republic: Kirovabad, Shemakha and other cities. When the workers' faculty at Baku University began to function (in 1920) the number of its students was 209.[21] After a year, it reached 548; in 1923/24 — 1,728 and in 1924/25 scholastic year — 2,694.[22] In the 1925/26 sholastic year, the number of students attending workers' faculties in the republic reached 3,046.[23]

The first group graduated from workers' faculties in 1923. The majority of the graduates continued successfully to study at higher and secondary specialized educational institutions. The Baku workers' faculty alone had trained 856 persons for institutions of higher education during the five-year period, stretching over the 1920/21 to 1925/26 scholastic years.[24]

Initially, the curriculum of workers' faculties was of a general educational character, there was no professional orientation of students. However, the intensive reconstruction of the national economy and the laying of the foundations of the socialist economy called for the introduction of corresponding changes in the system of teaching at workers' faculties. In 1930, they were reorganized on a branch basis. The term of study at day departments was three years and at evening departments four years. By the 1932/33 sholastic year the student body at workers' faculties had reached 8,191, of which 82 per cent was of working class or peasant origin. In the 1929/30 scholastic year alone, 257 graduates of workers' faculties entered institutions of higher education.

The role of workers' faculties cannot be overestimated as an effective form of pre-university education when there

existed a shortage of people with a sufficient educational background for continuing studies in higher and secondary specialized educational institutions. This question was the centre of attention not only of the bodies of public education, but also of legislative and government bodies. It was discussed at the Third Azerbaijan Congress of Soviets which noted in its resolution: "...The organization of workers' faculties is a major achievement of Soviet power. During a short period of existence, they have gained great popularity among the worker and peasant masses.

"Workers' faculties ... provide an opportunity for factory workers and peasants to enter higher educational schools to acquire knowledge and to train specialists from among the ranks of the proletariat capable of building a new life. Attributing great significance to workers' faculties in a workers' and peasants' state, the Congress proposes that a maximum of effort and means be given to the further expansion of Azerbaijanian workers' faculties and the increase of their basic equipment material."[25]

At the same time, workers' faculties were only a temporary measure. In the initial stage of its development, the young Soviet state had to accept this unusual form of training people for their subsequent enrolment in higher educational institutions. As the educational system in the country developed and became consolidated, the need for workers' faculties diminished and they subsequently ceased to exist, having fulfilled their socio-political and pedagogical mission.

This form of acquiring a rapid increase in the number of educated people who could continue studies in a higher or a secondary specialized educational establishment was one of the aspects of the training of specialists for the national economy. The search for new forms could not stop there. During the first decades of its existence the ordinary day school form of higher and secondary specialized education in Soviet Azerbaijan was not yet able to meet all the requirements of the republic for specialists. Because their numbers were small, the practice of promoting the most experienced and educated workers and peasants to leading posts and specialists' jobs became widespread.

The scope of this method for the formation of intelligentsia was broad. This is illustrated by the following figures. The total number of persons doing intellectual work reached

148,700 in 1939[26], and, according to the data of 1941, there were 47,800 specialists with a higher or secondary specialized education.[27] Consequently, the majority of people engaged in intellectual work had no particular theoretical training. In these conditions, the problem of the training of so-called practising workers—people without specialized education but doing specialists' work—arose.

Considering the valuable experience acquired by this category of workers, the Soviet state did not remove them from their work and replace them by graduates of institutes and secondary technical schools. At the same time, the bulk of "practising" workers, due to objective reasons, such as age, family status, etc., could hardly be drawn to studies if it meant stopping work. Meanwhile, with the development of technology and complexity of all types of intellectual work, the theoretical foundations of scientific knowledge and professional ability to use this knowledge practically acquired by each worker became of primary importance. Experience and skill alone proved inadequate.

In an attempt to find an optimal variant ensuring the most efficient way of promoting "practising" workers, the Soviet state decided, in the latter half of the 1930s, to train them in institutes and secondary technical schools while continuing work. Correspondence course departments began to open. In 1938 a pedagogical institute of correspondence courses was set up in Baku, and a little later, a correspondence course department was organized in a number of other institutes and technical schools.

The basis of the training of specialists continuing their work, was furnished by their independent studies following the curricula and plans of day school departments with regular tests and exams at fixed dates. Special lectures and workshops were organized for correspondence course students; as in addition to lectures they had seminars and meetings which helped their learning. The state made it obligatory for offices, departments and businesses where correspondence course students worked to create the necessary conditions for successful studies, including the payment of full wages and salaries during their studies and up to the time of their exams, including final exams and preparation and presentation of diploma theses.

These benefits contributed to a great influx of students

to correspondence course departments of institutes and technical schools. By 1939, institutions of higher education trained, using this system, 377 specialists, and secondary specialized educational establishments, 338 specialists. In 1940, there were 6,045 students studying at correspondence course departments (that is about half the total number of students), and 213 persons—in secondary technical schools.[28]

The correspondence course form of training specialists was a very promising one. Subsequently, its functions broadened. It became an important channel for satisfying the social requirements of the population for higher and secondary specialized education.

d) Modification of the social structure and the "Azerbaijanization" of the system of training specialists

The democratization of higher and specialized secondary education is a multiform process requiring the simultaneous solution to many questions. Naturally, there must be a network of educational institutions. Also, the time required for training specialists should not be too long, for the construction of a highly developed society must not drag on indefinitely; it demands the participation of a great number of specialists. Another aspect is the need to elaborate the principles and contents of the process and syllabuses in accordance with the requirements of socialist society. Finally, we should mention the necessity to kindle the yearning for culture amongst the illiterate masses and expand and develop society's aspiration to education and skilled labour.

Work proceeded along all these lines in Soviet Azerbaijan. This was not enough, however. In the drive for the democratization of higher and specialized secondary education, for the training of specialists from among working people, there was another handicap: a low standard of living amongst workers and peasants, that is, those social groups which had to form the foundation of the people's intelligentsia. Leaving one's job for a period of study meant the loss of a wage or a salary for the family. Although studies were free, to keep workers' and peasants' youth in higher and secondary specialized educational establishments they had to be provided with material assistance.

The government of the republic devoted special attention to this question. In September 1922, it adopted a special decision, The Establishing of Scholarship for Students of Higher Educational Institutions. It is said in part: "1. All government bodies functioning with independent financing as well as co-operative and private institutions should establish scholarships for institute and university students in accordance with their resources, but not less than 200 scholarships. 2. Over and above the scholarships mentioned in para 1 there should be established 100 state scholarships for institute and university studensts."[29]

Scholarships were granted, first of all, to students who had worked for at least five years at factories or plants and had distinguished themselves during this period. Similar measures were to be applied to students of secondary specialized educational establishments.

Already by the beginning of the 1922/23 school year there were 250 state scholarships and 500 sholarships instituted by individual departments and organizations.[30] A special commission of the Central Committee of the Communist Party of Azerbaijan, having examined the material situation of students, advanced a proposal to set up a scholarship fund at institutions of higher learning.

As well as granting students scholarships, greater attention was being paid to improving their housing conditions, providing them with textbooks and learning aids, etc. Conditions at institutes and technical schools improved with every passing year. This greatly stimulated the influx of working youth to institutes and technical schools.

Of great importance to improving the social composition, and ensuring the qualitative growth of students of institutes, university and technical schools were decisions by the People's Commissariat of Public Education of the Azerbaijan republic of June 5, 1923, and especially one emanating from the Central Committee of the Communist Party of Azerbaijan of June 29, 1924.

In accordance with the Commissariat's decision, rules of admittance to higher and secondary specialized educational establishments were modified. For example, starting with the 1923/24 academic year, enrolment of students was entrusted to a central inter-institute commission instead of the previous practice of enrolling students directly by

the educational establishments. Workers' children that had graduated from secondary school, had priority of enrolment.

As a result of the social policy of the Communist Party and the Soviet state, the proportion of representatives of the working class and the peasantry of the total number of students was growing from year to year. In the 1924-1925 academic year, the proportion of working class students comprised 13.6 per cent and students of peasant origin—12.7 per cent, whereas in the 1927-1928 academic year, the figures were 20.0 and 24.9 per cent respectively. In the 1932-1933 academic year workers and peasants accounted for 71.3 per cent of the total student body (the former 50 per cent and the latter 21.3 per cent). Prior to the 1930-1931 academic year there had been no students of working-class or peasant origin at the Conservatoire, whereas two years later their proportion reached 31.7 per cent.[31]

Parallel to the course aimed at a radical change in the social composition of students in favour of representatives of the working class and the peasantry, a great deal of work was conducted to attract as many Azerbaijanian young people as possible to study at institutes and technical schools. The social policy of Soviet power was aimed at the solution of this big problem. The Azerbaijanians comprised an absolute majority of the republic's population, and their proportion in the working classes, especially among the peasants, was quite high. Creating favourable conditions for representatives of the working class and the peasantry to enrol in higher and specialized secondary educational establishments, the Soviet state ensured an increase in the number of young Azerbaijanians among students. However, there were additional difficulties in solving this problem connected with the fact that, as we have already noted, the educational level of the Azerbaijanians was considerably lower than that of the working people of other nationalities living in Azerbaijan.

Immediately following the victory of Soviet power, the problem of enrolment of Azerbaijanians in higher and secondary specialized educational institutions acquired great importance. In the decisions of the 3rd Azerbaijan Congress of Soviets (November-December 1923) we read: "The drawing of Turkic (Azerbaijanian) workers and peasants

into the schools of higher learning, their training as future specialists in various branches of the economy and most of all, the training of Turkic youth for scientific and professional technical activity, such are the primary tasks facing Azerbaijanian higher educational institutions."[32]

As the educational level of the majority of Azerbaijanian youth did not permit them to enrol in institutes and technical schools on a wide scale, the solution lay in sending them to workers' faculties. Already in the 1924-1925 academic year, out of 2,694 students, 1,319 were Azerbaijanians,[33] and in the 1925-1926 academic year, of 3,046 students, 1,590 were Azerbaijanians.[34] In the 1920-1921 academic year there was not a single Azerbaijanian girl or woman among the students of workers' faculties, whereas in the 1925-1926 academic year there were 113.[35]

The victory of Soviet power created favourable conditions for the transfer to teaching in the native language. However, in view of the lack of scientific and teaching personnel from among Azerbaijanians and textbooks and learning aids in the Azerbaijanian language, teaching in institutes and technical secondary schools was at first conducted mainly in Russian. This prevented the active drawing of Azerbaijanians to educational establishments. The preparation of conditions enabling the transfer to teaching in Azerbaijanian was an urgent matter.

The First Azerbaijan Congress of Soviets gave serious attention to this problem. It adopted an important decision: "To make the Azerbaijanian language a compulsory subject for students at all departments of the Azerbaijan State University and the Polytechnical Institute."[36]

The problem of teaching in the Azerbaijanian language needed much attention. The 2nd Azerbaijan Congress of Soviets (April 1922) also discussed it. One of its decisions read: "With a view to providing opportunities for the teaching personnel of Azerbaijanian secondary schools to receive a higher education, for the purpose of which Azerbaijanian students should be enrolled in the history-philology and physics and mathematics departments of the University, 40 state scholarships should be established in each department for young people of Azerbaijanian nationality."[37]

Subsequently, the problem of the "Azerbaijanization" of the system of training of specialists continued to remain

the centre of attention of Party and government bodies. The scope of work grew yearly on the creation of study materials in the Azerbaijanian language for students of higher and secondary specialized educational establishments. An important role in this was played by a commission on scientific terminology set up at the Council of People's Commissars of the Azerbaijan republic.

These measures brought positive results. The proportion of Azerbaijanians in higher and specialized secondary educational establishments was increasing. In the 1920-1921 academic year, Azerbaijanians accounted for only 1.5 per cent of the student body, whereas in the 1924-1925 academic year the figure rose to 21.9 per cent and in 1927-1928, to 29.4 per cent. On the whole, during the 1920-1928 period, the number of Azerbaijanian students in higher educational institutions had risen from 278 to 1,373.[38] If in the 1919-1920 academic year there were only 12 Azerbaijanian girl students in the republic,[39] in 1927-1928 the figure rose to 309[40]. In the 1926-1927 academic year, Azerbaijanians comprised 67.7 per cent of all students attending specialized technical secondary schools.[41] In 1927-1928 there were 922 Azerbaijanian girl students studying at secondary specialized educational institutions.[42]

The number of Azerbaijanian teachers at institutes and secondary technical schools was growing. This was mainly due to an increase in the number of graduates of the republic's higher educational schools. This created favourable conditions for broadening the scope of the transfer to teaching in the Azerbaijanian language. In 1926 this transfer was effected in all faculties of the University.

The results achieved permitted the 8th Congress of the Communist Party of Azerbaijan (November 1927) to note: "The 'Azerbaijanization' of higher educational institutions is being implemented. However, this transfer is not yet complete. It should be developed on a still broader scale, relying on the comprehension of the personnel in these establishments and completed as soon as possible. The training of scientific workers from among Turkis (Azerbaijanians) or people speaking Turkic (Azerbaijanian) language, remains one of the principal tasks in the 'Azerbaijanization' of the institutions of higher education."[43]

Thanks to the measures adopted, great successes were

achieved in providing educational establishments with teaching personnel, mainly Azerbaijanian. In the 1927-1928 school year, the number of scientific and teaching staff of institutions of higher learning reached 567 (as against 222 in the year 1920/21). Of these, 180 were Azerbaijanians.[44] In the late 1920s, teaching in all educational establishments in the republic was conducted in both the Russian and Azerbaijanian languages. This made it possible to enlarge the enrolment of Azerbaijanians in institutes and technical schools. In the 1929-1930 academic year, Azerbaijanians accounted for 49 per cent of all enrolled students,[45] in 1930/31—56.1 per cent, and in 1931/32—63.1 per cent.[46] Naturally, the proportion of Azerbaijanians in the total student body increased from 27.2 per cent in the 1928-1929 academic year to 50 per cent in 1932-1933. The number of Azerbaijanian girl students in 1933 grew by 6.7 times as much as in 1928, having reached 1,045.[47]

The results achieved in the process of "Azerbaijanization" of the system of higher and secondary specialized education were so rapid and important that already by the mid-1930s this task had in the main been solved. That was why the enrolment system could now be changed, and the principle of enrolment due to a candidate's social origin could be abandoned. "The construction of the foundation of the socialist economy, the victory of socialism, the abolition of the exploiting classes and changes in the social structure of society have removed the need to take into account the social origin and status of citizens passing entrance exams," read a decree of the Central Committee of the Communist Party and the Council of People's Commissars of the USSR of July 23, 1936.[48] Workers' faculties were also closed. From now on only the most prepared candidates wishing to enroll, those who had passed entrance exams, were accepted at institutes and technical schools, irrespective of their social origin. This, undoubtedly, contributed to forming the student body from among sufficiently educated people, wishing to continue their studies.

The training of specialists at higher and secondary specialized educational establishments proceeded at a rapid pace in Azerbaijan during the 1920s-1930s. The new system taking shape under tumultuous conditions due to the development of socialist construction, provided the national

economy with increased numbers of national intellectuals and the institutes, faculties and technical schools successfully tackled great and responsible tasks entrusted them by socialist society.

e) Conclusions—Chapter III

The formation of the national intelligentsia, being a result of the cultural revolution, is at the same time an indicator of the cultural progress of society and its scientific and technical maturity. Each society creates its own intelligentsia in its own way and determines its basic socio-political features. This also develops another aspect: society itself constantly experiences its intelligentsia's transforming influence which is an active factor in its development.

This can also be seen in the original of Soviet Azerbaijan experience.

First, the formation of the intelligentsia in the Azerbaijan republic reflected the concept of the democratization of education in socialist society. This meant that the process of "Azerbaijanization" was based on the mass character of education and formation for the working classes. The main theory was that in a country developing along socialist lines, the national intelligentsia could only be a people's intelligentsia. This was precisely why "Azerbaijanization" of higher and secondary specialized education was accompanied (and it could not be otherwise) by the training of specialists from among other national groups.

Secondly, in Soviet Azerbaijan, just as in the entire Soviet Union, the intelligentsia that was taking shape, represented a new socio-political phenomenon unknown in the past. Naturally, it retained the element of continuity, for it was formed on the basis of the cultural wealth which had been created and accumulated by the people, it preserved the treasures of that culture and was called upon to enrich it with socialist ideals. In other words, the national intelligentsia of Soviet Azerbaijan was a national phenomenon with an important socialist content.

Thirdly, a great role in the formation of the national intelligentsia in the republic was played by the system of higher and secondary specialized education which had come into being thanks to the efforts of Soviet power and its pol-

icy of democratization of education. This was an exceptionally difficult task for practically everything had to be started from scratch, considering that almost 100 per cent of the population were illiterate. It was necessary to accomplish in a few years what had not been done in centuries.

Fourthly, the vast scope and complex conditions could not be included in the usual schemes. Hence the need to elaborate and implement new decisions and methods. Workers' faculties and studies by correspondence were a case in point. Another innovation was also the fact that the training of specialists was conducted in the native language in an economically backward, formerly colonial outpost, and this was a recognized principle of state policy which was actually implemented, not just formally proclaimed.

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[14] Ibid., p. 62.
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[32] *Resolutions and Decisions of the Congresses of Soviets of the Azerbaijan SSR. 1921-1937*, p. 46.
[33] Central State Archives of the October Revolution of the Azerbaijan SSR.
[34] *Bulletin of Azerbaijanian Central Statistical Board*, Baku, 1926, No. 5(10), p. 1.
[35] Central State Archives of the October Revolution of the Azerbaijan SSR.
[36] *Resolutions and Decisions of the Congresses of Soviets of the Azerbaijan SSR. 1921-1937*, p. 11.
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[38] Calculated on the basis of: *The Communist Party of Azerbaijan in Socialist Construction*, Baku, 1961, p. 100.
[39] Ibid.
[40] Central State Archives of the October Revolution of the Azerbaijan SSR.
[41] N. Pashayev, op. cit., p. 93.
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[43] *Resolutions and Decisions of the 8th Congress of the Communist Party of Azerbaijan*, Baku, 1928, pp. 56-57 (in Azerbaijanian).
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[46] Ibid.
[47] Calculated on the basis of: *The Communist Party of Azerbaijan in Socialist Construction*, p. 100.
[48] *The CPSU in Resolutions and Decisions of Congresses, Conferences and Plenums of the Central Committee*, 8th edition, Vol. 5, p. 272.

Chapter IV

TRAINING OF HIGH-LEVEL PERSONNEL IN CONFORMITY WITH THE ECONOMIC DEVELOPMENT

A specific feature of the Soviet system of higher and specialized secondary education is that from the very beginning it was so oriented as to establish close ties with production and the national economy. Under socialism, the training of specialists is closely connected with the concrete socio-economic needs of society. Specialists are trained not on the basis of some vague plan for their utility within the economy, but for definite concrete requirements in branches of the national economy and the country's social and cultural progress. This is why the system of their training can quickly react to any changes in the economic, scientific and technical sectors. Azerbaijan's experience makes it possible to understand the marked connection between higher and secondary specialized education and the development of the national economy.

(a) The impact of industrialization on the socio-economic structure and the educational level of the population

The first years of the development of Azerbaijan was the period of rehabilitation of the republic's economy, devastated by the civil war and imperialist intervention. Already in 1928, the total volume of industrial production exceeded the 1913 level by 30 per cent. Azerbaijanian agriculture also scored notable successes during that period. It surpassed many of the 1913 indices and came quite close to others.

The rapid growth rates of the economic reconstruction of

the republic made it possible as soon as in the mid-1920s to switch over to an accelerated industrialization. Soviet Azerbaijan entered a period of full-scale construction of socialist society. In a relatively short space of time, the people had to do away with economic backwardness, turn the country from an agrarian into an industrial-agrarian one, effect the socialist transformation of agriculture, considerably improve the material standards of the people and finally make a decisive step in raising their cultural level, ensuring the rapid pace of the economic and cultural advancement.

During a short period of time, a big step forward was made in the republic's industrialization. By the prewar year of 1940, the total volume of its industrial output had grown six times over as compared with 1913. After a slump, caused by the war, industrialization again proceeded at a rapid rate. Industrial development rates by five-year plan periods were as follows (see Table 8).[1]

Table 8

GROWTH RATES OF TOTAL VOLUME OF INDUSTRIAL OUTPUT BY FIVE-YEAR PLAN PERIODS

	Entire period	Annual average
First five-year plan period (1932 in percent to 1928)	186	16.4
Second five-year plan period (1937 in percent to 1932)	203	15.6
Three years of third five-year plan period (1940 in percent to 1937)	121	6.5
Five years (1945 in percent to 1940)	78	—
Fourth five-year plan period (1950 in percent to 1945)	178	12.2
Fifth five-year plan period (1955 in percent to 1950)	145	7.7
Sixth five-year plan period (1960 in percent to 1955)	140	7.0
Seventh five-year plan period (1965 in percent to 1960)	141	7.2

It should be noted that Azerbaijan's industrialization was of a multibranch character. In other words, economic policy adapted itself to the need to ensure, simultaneously and in a planned way, an increase in both the means of production and consumer goods. The multibranch character of the republic's industrialization was shown clearly in postwar years when the Soviet Union adopted a policy of peaceful development. This can be seen from Table 9.[2]

Table 9

GROWTH RATES OF THE TOTAL VOLUME OF INDUSTRIAL OUTPUT BY BRANCHES

	1940	1950	1960	1965
Entire industry	100	139	283	402
Electric power production	100	163	377	599
Fuel industry	100	97	144	178
Ferrous and non-ferrous metallurgy	100	by 27 times	by 956 times	by 1,201 times
Chemical and petrochemical industries	100	279	by 33.5 times	by 76.2 times
Engineering and metal-work industries	100	316	675	by 13 times
Timber, wood-work, cellulose and paper industries	100	125	258	423
Building materials industry	100	244	974	by 15 times
Glass and porcelain and earthenware production	100	88	189	355
Light industry	100	98	215	254
Food industry	100	99	159	210

During the period under review (1940-1965), a number of new industries appeared which Azerbaijan had lacked prior to the establishment of Soviet power in the republic. It began to produce steel pipes, lathes, well pumps, electric engines, transformers, instruments and means of automation, reinforced concrete assembly units, sulphuric acid, caustic soda, mineral fertilizers, synthetic goods and deter-

gents, textiles, etc. As for certain types of industrial goods which had been produced in Azerbaijan before the establishment of Soviet power, their production was greatly expanded. For instance, according to the data for 1965, the output of electricity had grown from 0.1 billion kwh in 1913 to 10.4 billion kwh, production of cotton fibre — from 22,400 to 118,500 tons, raw silk — from 102 to 358 tons, wine — from 824,000 to 2,203,000 litres.

At the same time, in the late 1920s-early 1930s, a radical restructuring of Azerbaijan's agriculture, as of the entire Soviet agriculture for that matter, began. This was done, primarily, by the collectivization and amalgamation of agricultural economies. Agricultural production in the republic was following the road to industrial development. In 1928 there were only 289 collective farms, whereas in 1940 their number reached 3,429. Later, many farms were amalgamated and turned into large industrialized cooperatives. As a result, the number of collective farms dropped to 990 in 1965. At the same time, the number of state farms was steadily growing: from 13 in 1928 to 285 in 1965. Tractors and other agricultural machines and implements were being supplied to the farms in increasing numbers. Collective and state farms were becoming highly productive enterprises. This is shown by the increasing yields of the principal agricultural crops.

As a result, Azerbaijan which had been one of the most backward regions of Russia, turned into an advanced industrial republic over some 40 to 45 years. According to some economic indices, let alone the cultural ones, Soviet Azerbaijan had by 1965 reached the level of many industrialized capitalist states. General results of its economic advancement during that period are given in Table 10.[3]

The rapid growth rates of industrialization and economic development as a whole have resulted in radical changes in the socio-economic structure of the population. The Azerbaijanian proletariat was growing steadily. In 1965 there were about 500,000 workers in Azerbaijan. That was more than six times their number in 1922. Table 11[4] gives an idea as to the structure of the employed population which has come about as a result of industrialization.

If we take the population employed in various branches of material goods production and non-productive branches,

Table 10

BASIC INDICES OF AZERBAIJAN'S ECONOMIC DEVELOPMENT (1913-1965)

	1920	1940	1950	1960	1965
Entire industrial output					
1913 = 1	0.4	5.9	8.3	17	24
1920 = 1	—	14	19	39	56
Gross agricultural output					
1913 = 1	...	1.6	2.1	3.1	3.2
Capital investments					
1920 = 1		75	155	289	374
Labour productivity in industry					
1940 = 1			129	214	242

Table 11

PERCENTAGES OF POPULATION EMPLOYED IN THE NATIONAL ECONOMY BY SECTORS (excluding students), 1965

Total number employed in national economy	100
In industry and construction	27.0
In agriculture and forestry	38.8
In transport and communications	7.4
In trade and catering, technical material supplies for trade, and distribution and purchases	5.7
In public health, physical culture and social security; public education and the arts; scientific research and its services	14.3
In government and management bodies, cooperative and public organizations, in credit and state insurance offices	2.3
In other branches of the national economy	4.5

the first group accounted for 73.2 per cent and the second — 26.8 per cent. In material goods production, industrial and office workers were about two-thirds of the entire number of those employed, the remainder being collective farmers.

Particularly noticeable shifts were taking place in the structure of the employment of women whose role in the national economy was steadily growing. Women were being drawn into the most varied branches of the economy and

other types of activity. In the first years of Soviet Azerbaijan's existence, the number of women employed in the national economy was insignificant, but by the mid-1960s, it came close to that of men's participation in production. This is shown by Table 12.[5]

Table 12

AVERAGE ANNUAL NUMBER OF WOMEN—INDUSTRIAL AND OFFICE WORKERS—IN NATIONAL ECONOMY

Year	Number of women — industrial and office workers (thousands)	Percentage of women in total number of industrial and office workers
1922	17	14
1928	30	14
1940	165	34
1950	228	40
1960	282	38
1965	414	40

We can anticipate that later the proportion of women employed in the national economy stabilized. In the late 1970s, it amounted to around 43 per cent. From the point of view of women's economic and social equality, it was an indisputable gain on behalf of the republic.

Industrialization has intensified the migration trend from village to town. The correlation between the urban and rural population has changed. In 1965, fifty per cent of Azerbaijan's population lived in towns, as against 24 per cent in 1913. As a result of growing urbanization, dozens of new towns sprang up.

The rapid industrial development rates of the republic were accompanied by no less spectacular changes in the educational level of the population. We have already mentioned this in earlier chapters. Here we consider it appropriate to cite the overall data of educational progress which are summed up in Table 13.[6]

It is significant that as a result of a consistent policy, steadily implemented, the evening out of the educational level of the urban and rural population continued. This reflected decreasing differences in the levels of socio-

Table 13

NUMBER OF PEOPLE WITH HIGHER AND SECONDARY EDUCATION (000 persons)

	(in thousands)			Per 1,000 population aged 10 and older		
	1939 17/1	1959 15/1	1970 15/1	1939	1959	1970
Number of people with higher and secondary education (complete and incomplete) including:	256.1	1,044.5	1,679.8	113	400	471
complete higher	21.6	77.2	158.0	10	30	44
incomplete higher		33.8	62.1		13	17
secondary specialized	234.5	115.5	202.2	103	44	57
general secondary		214.8	513.7		82	144
incomplete secondary		603.2	743.8		231	209

economic development between town and country. Let us see Table 14.[7]

One can thus say that the villages lagged behind the towns only as far as people with a higher education were concerned. It should be mentioned that employment of the urban population on the whole requires a higher educational level. This situation is an historical one and is typical not only of Azerbaijan, but also of other countries. With due account taken of this factor, the data of Table 14 show that in all other estimates the educational levels of the urban and rural population are almost equal. We have no data to compare the educational levels of the male and female population. But the very fact that in the 1960s illiteracy among women was completely wiped out speaks of the considerable successes in the drive for reaching a similar educational level for women as for men.

Finally, we must note that this section was not aimed at giving a thorough analysis of Azerbaijan's industrialization and economic development. However, the data cited can serve as a reference for the further solutions to the prob-

lems directly connected with changes in the system of training specialists and their subsequent employment in the republic's economy.

Table 14

EDUCATIONAL LEVEL OF URBAN AND RURAL POPULATION (by population census)

	Persons with education per 1,000 population					
	With higher and secondary (complete and incomplete)		Including			
			Higher		Secondary (complete and incomplete)	
	In urban settlements	In rural areas	In urban settlements	In rural areas	In urban settlements	In rural areas
All the population aged 10 and over:						
1939	211	48	21	2	190	46
1959	476	322	50	9	426	313
1970	565	360	70	14	495	346
People employed in national economy:						
1939	246	54	39	3	207	51
1959	591	381	86	13	505	368
1970	759	563	123	29	636	534

(b) Requirements of the national economy and the evolution of the structure and methods of training specialists

We have already mentioned that in the 1920s and 1930s Soviet Azerbaijan succeeded in creating a ramified system of higher and secondary specialised education which proved its viability and potentialities by training many thousands of highly qualified specialists in the two decades of its functioning. However, as industrialization advanced, the rate of economic, scientific and technical development also increased, together with the modernization of agriculture. It thus became clear that educational institutions were unable to meet all requirements of the national economy for specialists and that the scale of their training lagged far behind the

growth of socialist construction. Additional efforts were necessary for co-ordinating the training of personnel, its structure and methods with development requirements which were constantly growing. The diversity of these requirements had also to be taken into account, for the national economy needed not only an increasing number of specialists, but specialists of increasingly varied types.

The question of personnel training and measures that could better provide the national economy with specialists has always been a priority among the programmes of the leading bodies of the republic. In February 1931, the 7th Congress of Azerbaijan Soviets greatly emphasized the importance of this question in its decisions. They read: "The rapid growth of socialist construction and its steady rate of progression calls for extreme attention to be paid to the training of necessary personnel, i.e., skilled workers and qualified specialists."[8]

Of special importance was the question of training specialists for a major sector of Azerbaijan's economy—the oil industry. Indeed, the level and rates of the republic's industrial development were determined, above all, by the state of the oil industry which was at the time the largest raw material source of the entire country. However, the only higher technical education institution in Azerbaijan — the Polytechnical Institute — trained personnel for the most diverse branches of the national economy: industry, transport, construction and agriculture. It could not therefore cope with this great task, that is, the training of specialists for the oil industry. Consequently, in May 1930, the Azerbaijan Polytechnical Institute was reorganized and became the Azerbaijan Oil Institute, whose task was to train specialists for the oil-extracting, oil-processing and petrochemical industries. The scope of personnel training has greatly broadened, so that this institute soon became the main training centre of engineers for the oil industry in the entire Soviet Union.

During the period of the socialist organization of agriculture and its collectivization, the republic began to experience an acute shortage of specialists for that branch of the economy too. Previously, their training was done by one department. This was now insufficient. That was why a new institute—the Azerbaijan Agricultural Institute—was opened

in May 1929 after reorganization of the Department of Agriculture of the Polytechnical Institute, which began to train, on a broad scale, agronomists, veterinary surgeons, mechanics and other specialists for agriculture.

The organization of new educational institutions was accompanied by a search for additional means of expanding the enrolment of students in the existing training centres. As a result, the number of students had increased almost six-fold in higher educational establishments and 3.5-fold in secondary specialized educational institutions during the period between 1920 and 1940. Evidently, the number of persons who successfully completed their studies and received diplomas also increased. In 1940, 2,500 specialists with a higher education and 4,100 technical specialists with a secondary education, graduated from the republic's educational institutions.

In the course of industrialization and technical renovation of the economy the system of training specialists was not restricted to their numerical growth. Quite a few problems arose concerning the quality of training. It was not sufficient to merely expand the enrolment of students and increase the number of graduates. The latter's qualification had to be improved, so that they left their *alma mater* with sufficient knowledge to put it to use. This could be achieved mainly by searching for better forms and methods of the organization of the study process. This search has not always been successful. An example was provided by the previously mentioned team-laboratory method of teaching whose wide application adversely affected the quality of training specialists.

The problem of the quality of personnel training became so serious that the leading bodies of the Soviet state were called upon to deal with it. On September 19, 1932, the Central Executive Committee of the USSR adopted a decision, Curricula and Regime in Schools of Higher Learning and in Secondary Technical Schools, which mentioned such shortcomings as the lack of attention paid to improving the study process and curricula, better organizing the practical training of students and perfecting teaching methods. The decision suggested rejecting the team-laboratory method and intensifying searches for new methods of teaching. Guided by this decision, the republican bodies in

charge of training specialists adopted a number of measures in accordance with local conditions and the requirements of Azerbaijan's socio-economic and cultural development.

This decision was not a single or temporary measure. Several years later, the Central Committee of the Soviet Communist Party and the USSR Council of People's Commissars again took up the question on the expansion and improvement of the training of personnel with a view to its adapting to the requirements of the rapidly growing economy and the rapid pace of technical progress. Of special importance was the decision, The Work of Higher Educational Institutions and Their Management, adopted in July 1936.

The 1936 decision said that, while opening new and enlarging old institutes, a number of mistakes and shortcomings were overlooked which resulted in deficiencies in the organization of the study process at many institutions of higher learning. It was suggested as a primary task to discontinue frequent changes in curricula and reduce the number of compulsory subjects, as well as to abolish parallelism in training personnel. It was noted that contrary to the decision of the USSR Central Executive Committee of September 19, 1932, practical courses had not become a component part of the education process. The absence of strict deadlines for entrance exams, study terms and school holidays was a major shortcoming. It was emphasized that during enrolment too much attention was paid to formal estimates which resulted in admitting poorly prepared and sometimes even semi-illiterate students to institutes and colleges. The higher and specialized secondary educational institutions were assigned the task of radically changing their approach to the organization of the education process and to improve the training of future specialists.

During the 1930s, the organization standards of the education process, general to all higher and specialized secondary educational establishments, were elaborated and which were more in line with the requirements of society's economic and cultural development. A uniform and stable curriculum was established for each speciality in the country's institutes and secondary technical schools, listing the disciplines to be studied. An important place was allocated to pedagogical, laboratory and practical studies. Lectures

became the main element in college and university study, with practice sessions and seminars playing a major role. The compulsory presentation of a thesis by students was reintroduced. The laboratory-team method was dropped. Concording deadlines for entrance exams, holidays and enrolment were set.

One of the most important changes that occurred under the impact of industrialization and technical progress dealt with the structure of higher and specialized secondary education. These changes were aimed at adapting this structure to the national economy and the concrete requirements of its individual branches, taking into account the appearance of new specializations. Table 15 gives a more or less clear picture of the prewar structure of personnel training in the system of higher and specialized secondary education in Azerbaijan.[9]

Table 15

SPECIALISTS GRADUATED FROM HIGHER AND SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS OF AZERBAIJAN IN 1940 BY BRANCH GROUPS OF STUDY (persons)

Groups of specialities	types of educational institutions	
	higher	secondary specialized
Industry and construction	558	379
Agriculture	422	247
Economics and law	138	120
Education	910	1,903
Public health, physical culture and sports	507	1,389
Arts	8	68
Total	2,543	4,106

Azerbaijan State University played a great role in training specialists in the first two decades of Soviet power, just as the Azerbaijan Industrial Institute and Azerbaijan Pedagogical Institute. The former had trained 2,000 specialists[10] between 1922 and 1940. The Azerbaijan Industrial Institute graduated more than 5,300 specialists between 1923 and

1940.[11] During the same period, Azerbaijan State University had trained 2,400 teachers.[12] Between 1930 and 1940, the Azerbaijan Agricultural Institute had trained 2,743 specialists[13] and the Azerbaijan Medical Institute — 2,700 doctors.

Azerbaijan's higher and secondary specialized educational institutions scored notable successes during a relatively short space of time. They trained an army of highly qualified specialists. The new training system played a major role in the creation of the socialist intelligentsia, solved the problem of the formation of the national intelligentsia and facilitated the integration of women into the sphere of social labour. By January 1, 1941, more than 20,000 specialists with a higher education and 27,000 with a secondary education were working in the economic sector, in management and culture. Among them were 6,600 engineers, 5,200 technicians, 1,200 agronomists and veterinary surgeons and forestry experts with higher education and 800 persons with specialized secondary education; there were also 3,100 doctors, 5,100 doctor's assistants and medical nurses, 9,300 teachers, economists, commodity experts, lawyers, cultural and educational workers with higher education and 16,700 with specialized secondary education.[14]

These figures illustrate the great efforts and results achieved by the republic, as before the revolution only a handful of people had a higher or secondary education and very few could read and write.

(c) Higher and secondary specialized education: postwar difficulties and problems

Naturally, during the last war there was a drop in the training of specialists in Azerbaijan, just as in other Soviet republics. Some institutes, including such important ones as the Azerbaijan Institute of National Economy and the Azerbaijan Pedagogical Institute, were closed. Despite the fact that in 1943 the network of institutes, colleges and technical schools began to be restored, the training of specialists lagged behind the prewar level. In 1940, the republic's institutes trained 588 engineers and 422 agricultural specialists, whereas during the war the annual average figure of graduates was 278 for engineers and 110 for agri-

cultural specialists.[15] Although the process of training specialists in the republic did not stop, the number of those who graduated from institutes and technical schools was below the requirements of Azerbaijan's economy and other sectors, which grew immensely especially in postwar years. In 1945, the leading branch of the republic's economy—the oil industry—was provided with an engineering and technical personnel of 68 per cent only as against the prewar level.[16] By November 1, 1947, a considerable number of executive and specialist's jobs in state companies and administrations were vacant.

The grave consequences and losses due to the war called for a sharp increase in the number of specialists for all branches of the national economy. This question had to be tackled in new conditions and at a new development level which put greater demands on the training of specialists. We should also mention that the sector in which the efforts of the intellectual workers were going to be applied was continually expanding within this context. The republic had to solve a number of other problems as well. Among the managers and specialists there were still quite a few "practising workers"—persons without particular training. Some of them had a little general education only. Although during the prewar period a large social stratum of intelligentsia was created, a considerable part of which consisted of Azerbaijanian nationals, the educational and professional level of brain workers rose and the number of women among specialists increased, much had still to be done in that domain. Difficult tasks faced the republic in the upgrading of the qualification of its specialists.

In this connection the social and economic functions of higher and secondary specialized educational institutions broadened. The system of specialized training of personnel was practically the only instrument for regulating the numerical strength and composition of the intelligentsia and the principal channel of providing specialists for the national economy. Immediately following the war, a campaign was again launched—to increase the number of specialists trained. Enrolment in higher and secondary specialized educational institutions was growing at a rapid rate. Whereas in the prewar year of 1940 the institutes and colleges enrolled 4,300 students, their numbers doubled in 1950

(8,700) and in 1965 it reached 15,200.

The system of day classes was unable at the time to cope with all the tasks of training specialists. This was why the network of correspondence courses and evening classes was greatly enlarged. Table 16 shows this.[17]

Table 16

ENROLMENT IN HIGHER AND SPECIALIZED SECONDARY EDUCATIONAL ESTABLISHMENTS BY TYPES OF EDUCATION (000 persons)

	1940	1950	1965
Enrolled students in higher educational institutions	4.3	8.7	15.2
Sections:			
daytime	4.3	5.4	6.7
evening	—	0.1	3.0
correspondence	—	3.2	5.5
Enrolled students in specialized secondary educational institutions	9.2	6.7	18.1
Sections:			
daytime	9.2	6.1	9.1
evening	—	—	3.6
correspondence	—	0.6	5.4

As seen from Table 16, in 1965 more specialists were trained by correspondence courses and evening class courses than at daytime courses. A great role was played by the evening class and correspondence course sections in the training of specialists with secondary education qualifications. At the time the reason for this was not only the fact that the republic urgently needed personnel; the fact was that studies by correspondence and evening courses required considerably less expenditure. Subsequently, the significance of this type of education lost its importance and also its very aim shifted: it became oriented to meeting the social requirements of the population, especially for higher education, although they did not lose their role in the training of specialists.

Of great importance during the period under review was the question on the correlation between the various groups

of special subjects taught, for which personnel was being trained in the system of higher and specialized secondary education, especially the subjects in great demand and lacking qualified personnel. More specialists were being trained in electronic technique, in the new fields of radio engineering and communications, chemical technology, etc. Much attention was devoted, as always, to the training of teachers and instructors for all the stages of learning. Table 17 gives detailed information on this question.[18]

Table 17

NUMBER OF STUDENTS IN HIGHER AND SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS, BY GROUPS OF SPECIALITIES
(AT THE BEGINNING OF AN ACADEMIC YEAR, NUMBER OF PERSONS)

	1960/61		1965/66	
	higher education	specialized secondary education	higher education	specialized secondary education
1	2	3	4	5
Total	36,017	27,036	66,972	55,780
including groups of specializations:				
geology and geological prospecting	752	148	930	143
exploitation of mines	587	860	794	1,020
power engineering	1,195	1,575	1,308	1,873
metallurgy	—	284	189	894
engineering and instrument-making	2,028	2,766	5,190	4,643
electronics, electrical instrument industry and automation	808	300	4,833	3,245
radio engineering and communications	114	637	1,118	2,045
chemical technology	894	795	3,026	2,511
technology of wood, cellulose and paper	—	137	—	215

	1960/61		1965/66	
	higher education	specialized secondary education	higher education	specialized secondary education
1	2	3	4	5
technology of food production	—	905	—	1,737
technology of consumer goods	31	885	1,402	1,729
construction work	1,710	1,949	3,201	3,164
geodesy and cartography	—	—	—	104
agriculture and forestry	2,892	5,612	4,831	8,331
transport	738	1,265	1,322	4,224
economics	3,698	2,249	6,236	4,846
law	691	—	634	—
public health and physical culture	3,675	3,355	4,546	7,615
university specializations	5,087	—	6,801	—
public education	—	2,463	—	5,645
arts	519	851	1,000	1,796

In connection with the appearance of new branches of industry in Azerbaijan such as ferrous and non-ferrous metallurgy and the rapid development of the already existing ones, such as engineering, mining, chemical, light, food and building material industries, primary attention was given to the training of engineers and technicians. In 1950, a new higher educational establishment was opened in Baku, the Polytechnical Institute, whose role was to train engineers for construction, transport, machine-building, metallurgy, light industry, etc. New specialized secondary technical institutions were opened. During the first postwar years there were two technical secondary schools for training oilfield personnel as well as power engineering, electro-communications, railway, fisheries, industrial technological, community economy services, textile industry and other technical schools training personnel for Azerbaijan's industry. In

the 1950s, a new secondary technical textile school in Kirovabad and a food industry technical school in Baku were opened. In 1959, more than half of all students in secondary specialized schools studied at industrial technical schools.[19]

By the mid-1960s the number of engineers trained in the republic had grown by just over three times, and technicians—more than 8.5 times, as compared with 1940. The difference in the growth rates of the number of engineers and technicians was only natural. Previously, the question of the correlation between the contingent of trained engineers and that of technicians had not been given due consideration. The requirement however for technicians was somewhat greater than that for engineers at industrial plants. With this in mind enrolment in secondary technical schools was considerably expanded in the mid-1950s and largely exceeded that in engineering institutes. Similar rational changes done in accordance with the evolution of the economic structure were observed in agriculture too. The structure of the graduation of specialists that had taken shape by the mid-1960s, as compared with the preceding period, is shown by Table 18.[20]

Table 18

EVOLUTION OF STRUCTURE OF GRADUATION OF SPECIALISTS FROM HIGHER AND SPECIALIZED SECONDARY EDUCATIONAL ESTABLISHMENTS IN AZERBAIJAN (persons)

Specialists trained	1940		1950		1965	
	higher education	specialized second.	higher education	specialized second.	higher education	specialized second.
engineers	558	—	600	—	1,714	—
technicians	—	411	—	1,292	—	3,538
agricultural specialists	422	247	256	1,014	458	2,042
public health, physical culture and sports	507	1,389	716	1,213	628	2,081
public education	910	1,903	2,753	1,068	3,036	852
economics and law	138	120	386	240	—	693
arts and film	8	68	51	102	113	242
Total	2,543	4,138	4,762	4,929	5,949	9,448

It is significant that the proportion of women among specialists has been growing. In the middle of the 1960s, women specialists comprised over 40 per cent in the republic's national economy. This figure increased to 43 in 1979.

The rapid growth of economic, scientific and technical progress called for the upgrading of the qualifications of specialists. With this aim in view, various ways of improving the skill of specialists while on the job were being extensively carried out; this was of particular importance in branches where the proportion of intellectual workers without specific education remained considerably high. With a view to upgrading the qualifications of industrial employees without them stopping their work, branches of secondary technical educational institutions were set up at industrial plants. This greatly facilitated increasing the skill of technicians, mechanics, foremen, rate setters and other categories of middle level technical personnel. In the nine branches of the technical secondary oil school in 1955, 1,000 persons studied without having to drop their work; in 11 branches, the number of people receiving additional training reached 3,000.[21]

In 1956, a branch of a technological secondary school was opened at one of the largest engineering works.

Table 19[22] shows the amount of effort put into the upgrading of industrial and office workers' skills.

Table 19

UPGRADING OF INDUSTRIAL AND OFFICE WORKERS' SKILLS IN AZERBAIJAN INDUSTRIES, OFFICES AND ADMINISTRATIONS (000 persons)

	1950	1965
Total of industrial and office workers upgrading their skill	29.3	32.6
Workers only	24.7	30.8
Total of industrial and office workers that improved their skills	57.5	84.6
Workers only	34.8	61.1

If we take into account that in 1965 the number of industrial and office workers in the republic reached

1,045,000, it appears that one out of nine people working for the national economy improved his or her skill in one way or another. In subsequent years this system has expanded.

In postwar years, important changes were observed in the national structure of students.

During the prewar period, an important task—that of a mass integration of Azerbaijanian youth into higher and secondary specialized educational institutions—was solved. However, their presence was insufficient in most educational establishments, and especially low among students of higher technical and specialized secondary technical educational institutions. As a result, Azerbaijanians comprised only a small part of the technical intelligentsia.

In 1946, the number of Azerbaijanian graduates from the Industrial Institute amounted to 22 per cent, in 1947—10 per cent and in 1948—22 per cent.[23] The low number of Azerbaijanians in the student body of the technical educational institutions in those years had a valid reason. The fact was that when the national intelligentsia was emerging, primary attention was devoted to the formation of those of its groups whose working activity was inconceivable without knowledge of the life, customs and language of the indigenous population. Among them were teachers, doctors, agricultural specialists, managers and civil servants of public organizations.

However, in postwar years the proportion of Azerbaijanians noticeably increased among industrial and construction workers. In 1939, Azerbaijanians accounted for 26.2 per cent in the republic's working class, whereas in 1959 the figure was 47.7 per cent.[24] This set the task of adding representatives of the indigenous nationality to the technical intelligentsia of the republic. This was emphasized in a decree issued on July 1, 1948 by the Council of Ministers of the Azerbaijan SSR. The republican government decided that the principals and heads of technical educational institutions should attract more rural youth, primarily Azerbaijanians, to study. Indeed, under conditions where a majority of Azerbaijanians lived in rural areas, institutes and technical schools had to put much effort into orienting the senior students of schools. Employees of technical institutes visited various districts of the republic where they carried

out explanatory work among rural youth. This contributed to a stronger influx of rural youth to institutes and technical schools, who generally had a very vague idea about engineering, technical professions and trades than about those of teacher, doctor, agronomist or veterinary surgeon with whom they had an almost daily contact.

As a result, by the beginning of the mid-1950s, the proportion of Azerbaijanians among the graduates of technical educational institutions began to grow rapidly. In the Industrial Institute, it had increased from 43.6 per cent in 1954 to 74.3 per cent in 1958.[25] The number of Azerbaijanian students was rising in secondary technical schools, too. In 1952 their participation in the technical oil schools reached 60 per cent.

By the 1958/59 academic year, among the total student body of 36,000 there were 25,300 Azerbaijanians, or 70 per cent. In secondary specialized educational institutions, of 26,300 students there were 17,700 Azerbaijanians,or 67.3 per cent.[26]

Studies in two languages—Azerbaijanian and Russian—contributed to the enrolment in institutes and technical schools of representatives of all nations and nationalities living in the republic: Russians, Armenians, Jews, Lezghins and others.

The problem of "Azerbaijanization" in educational institutions that had once been so urgent at the beginning of cultural construction was completely solved in the late 1950s.

(d) Conclusions — Chapter IV

The orientation of the system of higher and secondary specialized education in Azerbaijan to strengthen connections with the development of the national economy and its structure can easily be seen. We must note, first, the impact of the changes in economic development — industrialization, collectivization of agriculture, the emergence of new branches within the economy, scientific and technical progress—on the structure of the training of specialists, the use of new forms and methods of teaching, the organization of the education process and curricula and on the correlation between the various levels of training. Secondly, economic development and technological changes largely

depend on availability of specialists, on the ability of the system of higher and secondary specialized education to satisfy the requirements of the national economy and the flexibility of the system; that is, on how quickly and effectively it reacts to the emerging requirements of society. Thirdly, a characteristic feature of the connection between education and national economy is the need to develop postgraduate education in most varied forms, which is especially evident during a period of rapid technological progress.

The experience of the Azerbaijan republic with this type of problem is very significant. This experience is interesting both during the period of the formation of the system of training specialists and at a subsequent stage of its expansion. It is also interesting because the establishment of ties between the system of training specialists and the national economy occurred simultaneously with two other phenomena in the republic—the "Azerbaijanization" of personnel and an increase in the proportion of women specialists. Without these two phenomena, it would have been impossible to ensure the accelerated economic and technological progress of Azerbaijan and its transformation from a backward farming region into a highly developed industrial region of the Soviet Union.

In other words, in the process of development, the national and the economic factors become closely intertwined, one is inconceivable without the other. This conclusion on the experience of Soviet Azerbaijan has, we believe, direct bearing on developing countries.

Azerbaijan's experience shows that the training of specialists is also a national phenomenon. This meant that the task of training local Azerbaijanian personnel took pride of place in the republic's educational policy. Forming an autochthonous personnel is the main line of this policy. This problem has been completely solved in Azerbaijan during the period of building socialism. The national character of the system of training specialists means that it was subordinated, first of all, to the interests of the development of the republic's economy and culture. Only in that case could it become an effective instrument for society's progress.

Of course, at the initial stage of its development, Soviet

Azerbaijan relied, as we have mentioned, on the assistance of more developed regions of the USSR and especially that of the Russian people. Characteristically, that assistance emphasized the need to train national Azerbaijanian personnel so that the system of training specialists in the republic could become a self-sufficient one.

It should be stressed that the principle of autochthonous personnel has nothing to do with exclusive nationalism. The implementation of this principle was carried out with internationalist asssistance and the Azerbaijanian national system of training personnel continues to maintain relations with the similar systems of other Soviet republics in terms of equality and internationalism. This cooperation is generated by strong democratic principles common to all relations between the socialist nations of the USSR, and also in the interests of a dynamic development of the national economic complex of the entire country and of its various regions in particular.

1 *National Economy of the Azerbaijan SSR for 60 Years*, Baku, 1980, p. 82.
2 Ibid., pp. 83-85.
3 Ibid., pp. 38-40.
4 Ibid., p. 199.
5 Ibid., p. 202.
6 Ibid., p. 33.
7 Ibid., p. 33.
8 *Resolutions and Decisions of Congresses of Soviets of the Azerbaijan SSR. 1921-1937*, p. 134.
9 *Cultural Construction in the Azerbaijan SSR. Statistical Survey*, p. 70.
10 Calculated on the data in: N. A. Pashayev, *Triumph of Cultural Revolution in Soviet Azerbaijan*, Moscow, 1976, p. 52; H. O. Alimirzoyev, Op. cit., pp. 129-130.
11 I. A. Ibragimov, A. N. Abbasov, Op. cit., pp. 66-67.
12 Sh. Sadykhov, Kh. Azimov, M. Salakhov, *Lenin Azerbaijan Pedagogical Institute for 50 years*, Baku, 1971, p. 47 (in Azerbaijanian).
13 *Twenty Years of Azerbaijan Agricultural Institute*, p. 12.
14 *Achievements of Soviet Azerbaijan over 40 Years. Statistical Survey*, p. 177.
15 *History of Azerbaijan*, Vol. 3, Part II, Baku, 1963, p. 250 (in Azerbaijanian).
16 V. E. Nosov, *Formation and Growth of Soviet Intelligentsia During the Final Period of the Construction of Socialism. 1945-1958.*

Candidate thesis, Moscow, 1966, p. 159.

[17] *National Economy of the Azerbaijan SSR for 60 Years*, p. 289.

[18] *National Economy of the Azerbaijan SSR for 60 Years*, pp. 286-287.

[19] *Cultural Construction in the Azerbaijan SSR. Statistical Survey*, p. 70.

[20] *National Economy of the Azerbaijan SSR for 60 Years*, pp. 292-293.

[21] A. M. Eldarov, *The Growth of the Working Class of Azerbaijan During the Years of Postwar Socialist Construction*, Baku, 1971, p. 76.

[22] *National Economy of the Azerbaijan SSR for 60 Years*, p. 210.

[23] I. A. Ibragimov, A. N. Abbasov, *Fifty Glorious Years. (Azerbaijan Oil and Chemistry Institute Named After Azizbekov)*, Baku, 1971, p. 98.

[24] S. A. Senyavsky, V. B. Telpukhovsky, *The Working Class of the USSR. 1938-1965*, Moscow, 1971, p. 333.

[25] Calculated on the basis of: A. I. Ibragimov, A. N. Abbasov, Op. cit., p. 98.

[26] Calculated on the basis of: *Azerbaijan in Figures. Statistical Reference Book*, Baku, 1964, pp. 206-207.

Part II

PUBLIC EDUCATION AND TRAINING OF PERSONNEL IN AZERBAIJAN AT THE PRESENT STAGE

Chapter V

THE CARRYING INTO EFFECT OF THE PRINCIPLE "SECONDARY EDUCATION FOR ALL"

In less than half a century after the establishment of Soviet power in Azerbaijan, this formerly retarded region of tzarist Russia set itself a historic task—to give a secondary 10-year education to all young people. What factors determined the necessity for such a decision, one that signified a new stage in the development of public education in the republic? What problems arose in regard to this decision? What difficulties faced the republic and which methods were used to carry out this task? This chapter tries to answer these questions which, in our view, could be of interest to other countries, including developing ones.

(a) Present stage of development in Azerbaijan and the general school system

On November 10, 1966, the CPSU Central Committee and the USSR Council of Ministers adopted an important decision, Measures to Improve the Working of Secondary General Schools. This official directive was the first to develop the idea of the transition to universal complete secondary education for the growing generation all over the country, and suggested concrete measures and deadlines for the goal: 1970 for the main lines of its implementation, that is, during the eighth five-year plan period. From then on, the universalization of education in the upper secondary school was declared the key factor of educational policy.

Prior to that decree, an eight-year schooling was com-

pulsory in the Soviet Union. Now, compulsory education for young people was extended by two years. It should be emphasized, however, that it was not just to ensure a quantitative increase, but a task which society was going to tackle on a new qualitative basis.

At the end of the eighth five-year plan period (1966-1970) the results of the fulfilment of this historic task were analysed. A thorough analysis has shown that all the conditions now existed in the country for consolidating the results achieved and completing transfer to universal secondary education during the ninth five-year plan period (1971-1975). The Resolution of the 24th Congress of the CPSU on the Report of the Central Committee said, among other things: "The Congress considers it important to achieve a further improvement of the entire system of education in accordance with the requirements of the development of the economy, science and culture, and of the scientific and technological revolution.

"During the new five-year period the transition to universal secondary education shall be completed and measures shall be taken to secure a further expansion of the material basis of the general education schools, raise the level of teaching and prepare pupils more actively and more purposefully for socially useful labour."[1]

The concentration of attention upon this task as being the central one of educational policy was not fortuitous. The time of transfer to a new standard of education coincided with the period of the rapid development of the scientific and technological revolution in all Soviet republics, a period of transformation into a developed socialist society. Compulsory eight-year schooling corresponded, socially and politically, to the period of construction of socialist society in the Soviet Union and, economically, to the implementation of an industrial revolution in the form of industrialization and modernization of agriculture. The universalization of secondary general education, however, fulfilled the requirements and particularities of the developed socialist society and the scientific and technological revolution.

The coinciding of these three phenomena was bound to happen: a move towards universalization of complete secondary education, the construction of mature socialism and the development of the scientific and technological

revolution demonstrated the mutual ties closely linking them. We should like to emphasize that at each stage of its development society requires a specific and socially useful educational standard. This is also true of the scientific and technological revolution, whose development demands certain conditions, amongst them, a corresponding educational standard.

Let us see how these trends developed in the concrete socio-political, economic and cultural conditions of the Azerbaijan republic.

During the 1960s in Azerbaijan, as in the entire Soviet Union, a society developed which was characterized in the political documents of the Communist Party and the Soviet Government, as well as by Soviet science, as a society of mature socialism. We shall confine ourselves to elaborating on only the three basic aspects of the problem: socio-political, economic and cultural, from information collected from the Azerbaijan republic's experiences.

On the socio-political plane, we shall note, first of all, the qualitative changes that have occurred in Azerbaijan's social structure: the formation of a modern working class from among the Azerbaijanian population; the ultimate option of the peasants for collective farming, the formation of the national workers' and peasants' intelligentsia. The working class predominates in the social structure of Azerbaijan's population. The demographic processes taking place in the republic resulted in that by the early 1970s, the urban population for the first time exceeded the rural one. At present their correlation is 53 to 47.

Another important socio-political characteristic of Azerbaijan is that the Azerbaijanian people has now become a socialist nation and, together with other socialist nations of the USSR, is an integral part of the Soviet people, a new historical community. Outdated socio-economic relations have been eliminated in the republic; their place was taken by socialist relations. Socialist relations are the basis for the existing political system of democratic management in society.

As for the economic aspect, it is necessary to mention, first of all, the following fundamental result of Azerbaijan's development along the socialist road: the levelling of the economic development of various national components in-

herent in a socialist state and comprising a most important principle of its economic policy, has made the republic an economically advanced region. A high economic and scientific-technological level was a solid foundation ensuring the true equality of Azerbaijan and all other Soviet republics within the framework of a single socialist state.

Rapid growth rates brought the republic, in the 1960s and early 1970s, to a new economic situation which called for new methods of tackling development problems. A characteristic feature of this situation was the trend of Azerbaijan's economy, as an integral part of the USSR economy, to opt for predominantly intensive factors of growth. This means that, without minimizing the significance of the quantitative factors of growth, the model of intensive economic development is one oriented to a rise in the efficiency and quality of the entire economic activity.

In these new conditions, the economic development of the Azerbaijan republic was characterized by the following data (see Table 20).

Table 20

BASIC INDICES OF AZERBAIJAN'S ECONOMIC DEVELOPMENT FOR 1965-1980
(1965=100)

	1970	1975	1980
Gross national product	134	193	279
Added national income	133	185	271
Basic production assets in all branches of economy	134	183	256
Entire industrial output	137	206	301
Gross agricultural output	127	170	240
Commissioning of basic assets	160	210	290
Capital investments	143	191	242
Social work productivity	130	160	209
Labour productivity:			
in industry	127	170	218
in agriculture (cooperative production)	124	148	213
in railways	117	141	136
in construction work	118	148	175

Calculated on the basis of *National Economy of the Azerbaijan SSR in 1980*, pp. 11, 12; *National Economy of the Azerbaijan SSR during 60 Years*, p. 43.

The intensification of economic development made it possible to increase considerably the republic's industrial production. This is shown by the daily output of essential industrial goods. In 1980, the daily output of electricity was 41 million kwh, as against 29 million in 1965. Here are some figures on other commodities: sulphuric acid—1,782 and 357 tons; caustic soda—457 and 101 tons; mineral fertilizers—3,101 and 1,226 tons; AC motors—15,000 and 7,100 kwh; reinforced concrete assembly units—4,300 and 2,100 cubic metres; knitwear—82,000 and 38,000 tons; leather shoes—50,000 and 22,000 pairs; carpets and rugs 8,400 and 800 square metres; consumer market refrigerators 730 and 149; pottery and earthenware—102,000 and 22,000 units; canned food—1,284,000 and 374,000 tins; wine—28,300 and 6,000 decalitres.

The data on scientific and technological progress well indicates the intensive character of Azerbaijan's economic development. Take, for example, the creation and introduction of new machines, equipment and technologies. During the tenth five-year plan period (1976-1980), an average of 44 new types of machines, materials and instruments were developed annually; serial production of 77 new major types of engineering equipment was started, while the production of 31 obsolescent items was terminated, and seven automatic control systems for management and technological processes and plants were put into operation. In 1979, there were 1,590 mechanized assembly lines and 170 automated lines in industry.

During the period under review, the modernization of production equipment proceeded at a steady pace, as shown by the data of Table 21.[1]

Table 21

MODERNIZATION OF PRODUCTION EQUIPMENT IN CERTAIN SECTORS OF INDUSTRY (UNITS)

	1966-1970		1971-1975		1976-1980	
	Total	Average annual	Total	Average annual	Total	Average annual
Production equipment mechanized, total	8,054	1,611	10,334	2,067	12,493	2,499

	1966-1970		1971-1975		1976-1980	
	Total	Average annual	Total	Average annual	Total	Average annual
By sectors:						
electricity production	180	36	257	51	514	103
oil mining	501	100	176	35	398	80
iron-and-steel	376	75	84	17	55	11
chemical and petrochemical industries	439	88	561	112	617	123
engineering and metal-processing industries	799	160	627	126	685	137
building materials industry	82	16	67	13	389	78
light industry	5,237	1,048	7,440	1,488	8,838	1,768
food industry	70	14	293	59	616	123
other branches of industry	370	74	829	166	381	76

Intensification of scientific and technical progress also took place in agriculture, although in not quite such a fast way. The degree of mechanization of agricultural work increased considerably. Mention should be made of the increase of the energy-per-worker ratio in agriculture. During the ten-year period (1970-1980), the energy capacities in agriculture had almost doubled, the consumption of electricity had grown more than 2.5-fold. Table 22[3] gives a clearer picture.

Table 22

ENERGY-PER-WORKER RATIO AND ENERGY CAPACITIES IN AGRICULTURE (HORSE POWER)

	1970	1975	1980
Energy capacities per worker:			
on collective farms and in agricultural enterprises serving several farms	6.2	7.1	8.2
on state farms	7.9	9.0	10.1
Energy capacities per 100 hectars of sown land:			
on collective farms and in agricultural enterprises serving several farms	198	231	309
on state farms	369	448	587

Finally, mention must be made of an index, as important as that of the growth of capital construction. During the 1976-1980 period, the commissioned fixed assets amounted to 8,049 million roubles, as against 4,309 million in the eighth five-year plan period (1966-1970). For comparison, the index for the fourth five-year plan period (1946-1950), was 866 million roubles. This almost 10-fold increase in fixed assets during the postwar period shows that such great development in Azerbaijan's economy would require a new approach as to its future prospects. This approach materialized in the form of a move to an intensive development plan.

Economic progress and the modernization of the national economy, as shown by the rapidly growing role of the scientific and technical factor in development, had a powerful impact on the republic's education system, its orientation and prospects and on national culture. This system could not ignore the major qualitative changes going on in Azerbaijan's economy. This was inconceivable because, as a result of economic, scientific and technical progress, the qualification level of workers employed in the national economy increased considerably. According to data pertaining to the entire country, about 80 per cent of the existing specializations now require the general educational level corresponding to complete secondary schooling. This overall estimate, expressing the close connection between economic progress and education, provided a strong argument in favour of the introduction of compulsory secondary education. In other words, from an economic point of view, complete general secondary school education is a socially necessary minimum educational level at this time, when Azerbaijan's economy is undergoing intensive development.

This shows that, along with economic and scientific-technological progress, the role of the public education system, especially its basic one—general secondary school—is steadily growing. This fact is recognized legally in the Soviet Union. The new Constitution of the USSR, adopted in 1977, the decisions of the CPSU congresses and important government documents attach primary importance to the educational system. Not a single fundamental question concerning the development of the USSR's national econo-

my is solved without relating it to the development prospects of the system of public education, the training of personnel and the possibilities of its expansion and improvement. The universalization of compulsory secondary education has been proclaimed not only as the principal trend of the entire system of education, but as a vital factor indispensable for the country's socio-political, economic and cultural progress. *The Fundamentals of the Legislation of the USSR and the Union Republics on Public Education* adopted by the USSR Supreme Soviet on July 19, 1973, read: "The building of communism in our country and the continuous growth of the productive forces and scientific and technical progress has created an urgent demand for the all-round development of the coming generation, a correct supply of highly-skilled workers and qualified specialists to the national economy and further improvement of the standard of general and vocational training in the USSR.

"The generalization of secondary education and improvement of general, vocational, special secondary and higher education will contribute to the further growth of the Soviet people's culture, the instilling of communist conceptions and the achievement of higher productivity will prove an important factor in the overcoming of essential differences between intellectual and manual work and between town and country."[4]

We shall now examine the process of transfer to universal secondary education of young people in the Azerbaijan republic.

We should mention, first of all, that universal secondary education is implemented through four channels: general school, evening school, vocational schools and secondary specialised educational establishments. The principal channel is general school. The overall picture of the universalization of secondary education is given in Table 23[5].

The proportion of pupils who enrolled is school ten or eleven years ago and terminated is growing with every passing year. In 1980 it reached 93.2 per cent. The task of the universalization of secondary education for the younger generation in Azerbaijan has almost been achieved; only an insignificant portion of school pupils has not received a complete ten-year secondary education.

Table 23

INDICES OF YOUNG PEOPLE RECEIVING PROPER SECONDARY EDUCATION

Year	Received full secondary education									
	in day secondary schools		in evening (correspondence) schools		in secondary vocational schools		in secondary specialized educational institutions		Total	
	000	percentage	000	percentage	000	percentage	000	percentage	000	percentage
1969	46.8	46.7	19.0	19.0	—	—	7.2	7.0	73.0	73.3
1975	81.0	54.8	21.9	15.4	4.5	3.1	5.8	4.4	113.2	77.7
1976	87.7	55.9	25.4	17.4	6.3	4.2	5.7	4.0	125.1	81.3
1978	97.2	58.9	31.8	19.5	12.1	7.4	5.1	3.3	146.2	89.1
1979	99.6	59.6	30.7	18.6	13.7	8.3	5.1	3.1	149.1	89.6
1980	99.1	61.6	30.8	19.2	15.0	2.3	5.0	3.1	149.9	93.2

Measures began to be taken in the republic in order to give universal complete secondary education to *all* young people aged between 16 and 29, by offering various forms of extracurricular studies.

The great successes achieved by Soviet Azerbaijan in solving the main problem of public education at the present stage have not happened by themselves. The republic devoted great efforts and allotted large sums of money for the purpose. The allocations of the Ministry of Public Education of the Azerbaijan republic alone grew in the following way (mln roubles):

1960	*1965*	*1970*	*1975*	*1980*	*1981*	*1982*
85.0	165.5	212.8	323.3	404.0	409.5	419.1

According to our estimates, during the tenth five-year plan period (1976-1980) about 20 per cent of the entire republican budget was earmarked for the development

of education. This amounted to about 6.5 per cent of Azerbaijan's national income.

Keeping the expenditure for public education at such a high level was, of course, no easy matter. The main point, however, was not this. The task of the universalization of secondary education required the solution of a number of problems connected with the quality of teaching and the overcoming of serious difficulties, such as:

— the setting-up of the network of general schools and its improvement;

— modernization of the basics of education and curricula in accordance with scientific and technical progress;

— modernization of forms and methods of teaching, new concepts in conducting lessons;

— closer ties between general secondary school and institutes and industry.

Let us examine these questions.

(b) Economic and pedagogical aspects concerning the location of schools and their network

A rationally organized school network is an important condition in the development of education. From the economic point of view, the major problem is the limited character of society's resources and, consequently, the need to use them economically. If the construction of new school buildings is an extensive method of developing education, the efficiency and exploitation of the network of schools represents a more perfect, intensive method of its development through a maximum economical organization.

This problem is no less important from the pedagogical point of view. The rationalization of the school network, and first of all, the regrouping of schools, is an essential factor in raising the quality of all teaching work, especially the formation of pupils. The very fact of regrouping makes it possible to improve the teaching and material base of schools, increase the number of school teachers and perfect methodical work among them.

A more rational setup of the school network is a problem facing education at all its stages of development. As the number of school pupils increases and the standard of education rises, the problem acquires an ever greater sig-

nificance, and especially when society sets itself the task of instituting compulsory education for all young people. There are two aspects of the problem: economic and pedagogical. The solution to this problem in Azerbaijan met with serious difficulties: scattered inhabited areas, thinly populated generally and especially in mountainous regions of the republic; isolation of villages due to mountains, gorges and rapid streams; the need for teaching in four languages in some districts: Azerbaijanian, Russian, Armenian, Georgian; shortage of school premises and buildings for boarding schools. All this hampered the opening of schools of the type needed.

The extensive programme for the improvement of the school network that the republic had been considering over the past 10 to 15 years had to take into consideration all these difficulties and specific features of educational development. Tables 24 and 25 summarize the results of the implementation of this programme.[6]

Table 24

NUMBER OF DAY SCHOOLS

Year	Total	Including			
		primary	incomplete secondary (eight-year)	secondary	other
Town & country-side					
1914	976	976	18	15	—
1965	4,195	1,540	1,881	765	9
1970	4,343	1,221	1,821	1,287	14
1975	4,137	648	1,805	1,664	20
1979	4,000	404	1,609	1,964	23
1980	3,930	361	1,566	1,979	24
Town					
1965	598	115	380	270	9
1970	774	65	319	423	14
1975	855	31	278	526	20
1979	867	14	203	584	23
1980	820	19	195	591	23
Country-side					
1965	3,421	1,425	1,501	495	—
1970	3,522	1,156	1,501	864	—
1975	3,282	617	1,527	1,138	—
1979	3,133	381	1,395	1,357	—
1980	3,110	351	1,371	1,388	1

Table 25

NUMBER OF DAYSCHOOL PUPILS

Year	Total number of pupils	Distribution of pupils (thousands)			
		primary	incomplete secondary (eight-year)	secondary	others
Town & countryside					
1914	73.1	64.2	4.7	7.2	—
1965	1,035.0	73.0	468.0	493.0	1
1970	1,356.0	66.0	470.0	817.0	3
1975	1,476.0	21.0	402.0	1,048.0	5
1979	1,435.3	10.7	302.2	1,126.4	6.5
1980*	1,400.8	9.30	282.0	1,102.8	6.7
Town					
1965	495	12	205	277	1
1970	603	11	167	422	3
1975	633	2	120	506	5
1979	613.5	0.9	74.0	540.1	6.4
1980	590.3	0.4	70.0	513.3	6.6
Countryside					
1965	540	61	263	216	—
1970	753	55	303	395	—
1975	843	19	282	542.0	—
1979	821.9	9.9	225.6	586.3	0.1
1980	810.5	8.9	212.0	589.5	0.1

* A certain drop in the number of school pupils in the latter half of the 1970s is due to demographic reasons.

As can be seen from these tables the number of day schools had been growing up until the end of 1970 and later began to decrease due to a curtailment in the number of primary schools. This was caused by demographic changes, on the one hand, and the need to expand the network of secondary schools due to the increased rates of transfer to universal secondary education, on the other.

The network of day secondary schools has rapidly been expanding, especially in rural areas. By 1980 there were 1,979, made up of 591 in the towns and 1,388 in the country. The number of eight-year schools remained almost the same, inasmuch as a few were annually reorganised into

full secondary schools. At the same time new eight-year schools were being opened on the basis of the reorganized primary schools. In this connection, the network of primary schools had undergone considerable changes: it had decreased from 1,540 in 1965 to 361 in 1980, that is, it became smaller by 1,179. This was only natural. One part of the primary schools was reorganized into eight-year ones, and another, as it had no prospects of growth, was merged with neighbouring eight-year or full secondary schools. Mention should also be made of the fact that the number of remaining primary schools in villages and the number of their pupils were comparatively small, and there were practically no such schools in towns.

The number of pupils in primary schools is insignificant—930 (0.7 per cent), and it is dwindling from year to year, which should be seen as a positive factor. The number of eight-year schools, although it is still large (mainly in the villages), remains stable; however, the number of their pupils also diminishes every year. In 1980 it reached 282,000 boys and girls (20.0 per cent). On the other hand, the network of full secondary day schools and the number of their pupils are growing rapidly: in 1980 there were 1,102,800 pupils, that is, 79.3 per cent of the total number of school pupils.

The programme mentioned gave special attention to the improvement of the network of rural schools, for it was in the villages that one encountered the greatest difficulties in implementing compulsory secondary education. We should recall that general rural schools play a great role in socio-economic and cultural development and the overcoming of a relative lagging of villages behind towns.

As we have already mentioned, there were difficulties due to the republic's natural conditions, where there were many villages in far-off, hard-of-access mountainous areas, isolated from one another and sparsely populated. As a result, it proved impossible and economically and pedagogically impracticable to have primary schools in 1,000 rural communities, and eight- or ten-year schools in 2,000 such communities. This meant that about 30,000 children had to attend school in other villages or settlements which were at a distance of more than three kilometres from where they lived.

To overcome this difficulty, the efforts of the republic's educational bodies were concentrated on three aspects:

— To provide all collective and state farms with schools according to the principle "a school to each farm". The fact was that each farm grouped several villages. A school was built on the central part of the farm with a view to receiving all children from villages united by that farm. Thus, enlarged secondary schools were being opened in line with modern teaching standards. This was more rational than building small schools in each village.

— The question of the transportation of children living in outlying villages naturally arose. This created additional difficulties and required additional expenses to be borne mainly by collective and state farms. 80 to 90 buses are needed each year. The state pays the expenses involved in children's transportation by regular bus routes. It should be noted that this organized transportation of children successfully functioned in low-lying regions of the republic. It was much more complicated to organize it in mountainous areas.

— Finally, the construction of boarding schools became widespread. This was especially important for the republic's mountainous areas. By 1979 there were 215 boarding schools, catering for about 6,000 children. In these schools, a quarter of the children get free meals three times a day, the others paying only half the cost. There were also 56 boarding schools in the republic with 21,000 orphaned children living and studying there. Azerbaijan can also boast special boarding schools for gifted pupils. For example, there is one such school in Baku for mathematically gifted boys and girls. These schools have special curricula.

The process of rationalization of the school network also involved evening and correspondence course schools which form the second major channel of the implementation of universal secondary education. As we saw from Table 23, about one-fifth of the student population received a secondary education through this channel. Previously, emphasis was laid on the opening of correspondence course departments at day schools, whereas at present the new trend was to create and enlarge independent evening and correspondence course schools. This was caused by the fact that working youth, especially in the village, preferred cor-

respondence courses and mixed schooling. At the same time, for young people working on shifts there were enough schools, also functioning on a shift basis, which catered for their studies.

The consolidation of the school network made it possible to increase the number of pupils in each school. By the end of the 1970s the situation was as follows (see Table 26)[7]

Table 26

SCHOOL QUOTAS IN 1978

	For USSR			For Azerbaijan		
	town village (average)	town	village	town village (average)	town	village
Secondary school	585.1	842.0	399.8	579.8	905.8	439.6
Incomplete secondary school	156.5	337.0	129.0	194.4	376.5	166.5
Primary school	19.8	69.5	17.5	27.4	47.1	26.7

Although the average number of students in Azerbaijan corresponds to the one for the whole of the Soviet Union, and in some respects exceeds it, there are still quite a few small eight-year schools and even some complete secondary ones, not to mention a considerable number of primary schools, in the republic. At the end of the 1970s, beginning of the 1980s, the number of pupils in each of more than 300 primary schools did not exceed 30; the corresponding figure for more than 400 eight-year schools and 12 complete secondary schools was 100.

Many of these schools had sufficient pupils several years ago but due to the migration of part of the population to towns or beyond the republic, the number of pupils was falling from year to year. However, these schools are still functioning to enable the children to study close to home.

To keep small schools functioning over a long period is unjustified from the economic, pedagogical and administra-

tive points of view. The following calculations speak for themselves. In secondary schools with 1,210 pupils annual expenditures per pupil amount to 71 roubles, whereas in schools having only 172 pupils they rise to 156 roubles. A similar picture is obtained in eight-year and primary schools. According to preliminary estimates, in eight-year schools of 75 pupils, these expenditures run to 205 roubles and in primary schools, where the number of pupils is less than 70, they reach 292 roubles.

Economic considerations should be complemented by pedagogical ones as regards the organization of the study process in accordance with modern school requirements. It is obvious that modernized school equipment, that is, new, complex and expensive technical means of education and teaching aids, lab studies etc., can hardly be used in small and tiny primary and eight-year schools. This is why it is planned to continue to improve the school network and build enlarged schools which give the greatest pedagogic and economic advantages, although they give rise to other problems.

Another aspect should also be mentioned: a consequence resulting from the social effect the processes of school consolidation had, especially in rural areas, on the development of villages themselves. This process, in turn, contributed to their enlargement, the setting-up of a better transport system and consequently, the establishment of social, economic ald cultural ties between them.

(c) A new approach in determining education and curriculum

Soviet pedagogues, including Azerbaijanian ones, were taking a new approach towards the policy of education at the present stage of its development. As a result, two related questions should be examined here:

— What reasons prompted this new approach, in other words, why was the former educational curriculum not adequate for Soviet Azerbaijanian schools?

— What is the basis of this new approach and what is the new educational curriculum? How were they both elaborated?

The educational curriculum is not something permanent, decided once and for all. It can change, but not daily, or

even yearly, for that matter. It should remain stable for a certain period. In view of this contradiction between the stable character of education and its need for modification, it is important to choose the right time for its revision.

In the Soviet Union, this was the middle of the 1960s. The previously mentioned Decision of the Central Committee of the CPSU and the USSR Council of Ministers of November 10, 1966, Measures for the Further Improvement of the Working of Secondary General School clearly said: "With a view to further improving secondary education, creating necessary stability in the school work and regularly implementing the principles of polytechnical education and vocational upbringing, the USSR Ministry of Public Education and the Ministries of Public Education of Union republics should introduce scientifically substantiated curricula and study plans in order to bring the educational curriculum of education in line with the requirements of scientific, technical and cultural development."[8]

As we have already noted, a new stage began in the mid-1960s in the socio-economic and scientific-technological development of the Soviet Union and all Soviet republics, a period of intensive economic development and advancement of the scientific and technological revolution. During that period, a certain lag was observed between curricula and the new conditions of development, which was felt in the running of the day schools. These disparities could be observed in many fields and were of different origin. Some of them were quite serious.

One of the reasons for this situation was connected with the fact that the volume of studies was steadily growing, yet some programme materials became obsolete and, consequently, the knowledge obtained by students was out of date. This process had been going on at an incredible pace as scientific and technological progress got under way. It started a long time ago, with the birth of scientific knowledge. However, the scientific and technological revolution gave a powerful impetus. The well-known Soviet scholar, Academician A.P. Leontiev, gives the following view on the problem: "The fact is that the school curricula are now filled to the brim by varied material. There is an essential need for the constant influx of new material to this vessel of knowledge. However, it can contain only so much. Then

the process of 'backing out' begins: elimination begins, but this is insufficient. To add and subtract is not a beneficial solution for the acceleration of scientific and technological progress means that too much will have to be added and too little 'baled out'. This is another matter for controversy facing the school system."[9]

The continual stream of study materials proposed to students has given rise to another important pedagogical question which is expressed through a contradiction, or rather, in the link between the study process and the development of creative thinking in a student. In other words, inasmuch as it is impossible to know everything, it must be determined, on the one hand, how much and what to learn, that is, to define the volume of knowledge and information which can be retained by the human memory, and on the other hand, to train the mind to acquire the ability to think, to solve problems and to assimilate what is being taught. Here, it would be appropriate to quote Marx on the subject: "... of what use is a person who knows all the mathematical literature but does not understand mathematics? ... If such a pedant, who by his very nature is restricted to studying and teaching what he learnt and who will be incapable of further learning anyway ... were at least honest and conscientious, he could be of use to his pupils. He should not resort to lies and ruses, but should admit outright: there is contradiction here: some say this, others say that; as for me, I have no opinion on the subject; could you not discuss the matter yourselves and come to your own conclusion?

"By such an approach, students would obtain specific knowledge on the one hand, and on the other, their own work would be stimulated.

"I have of course asked for something that is contrary to the nature of that pedant. His main characteristic is that he does not understand these *questions*, and this is why his eclecticism boils down to merely furnishing ready-made *answers*."[10]

These sayings of Marx are a laconic presentation of the whole conception of a connection between the formation, the process of education and the development of the ability to think, which has become especially urgent at the present time. When fixing the tasks facing education at a time

of scientific and technological revolution, it is necessary not only to control and implement its results, but to direct the entire development process of this revolution.

On the subject of the dual character of the process of learning, the authors of a Soviet work wrote: "It is essential, since pedagogical theory and school practice raise the question not only to develop general abilities in every school pupil—comprehension, perception, concentration, memory, thought and imagination and the mastering of intellectual activity (analysis, synthesis, abstraction, generalization, etc.)—but also to form specific abilities and intellectual capacity, pertaining to one or another subject of study."[11]

However, the above concerns the purely heuristic aspect of the problem. Another, no less important aspect is the educational one. If the first concerns the formation of an educated person capable of creative thinking, the second consists in the forming of a personality, which in a socialist society means a person devoted to the ideals of that society. The decisive role is the moral one, for the individual's involvement in the building of socialist society determines the value and utility of that individual as a specialist.

The discussions held in all Soviet republics, Azerbaijan included, during the 1960s, were centred on these complex questions. Although they belonged to the category of "permanently" urgent questions, they were formulated in a new way, in accordance with the tasks that emerged and were being tackled by socialist society at the mature stage of its development. In the course of these discussions, ideas and concepts were advanced which were later elaborated in the preparing of curricula and study programmes, an important task given to the educational system by the leading Party and government bodies of the Soviet Union. It took a whole decade to solve this truly formidable task. As for the Azerbaijan republic, the introduction of the new education curriculum had begun in the 1966-1967 school year and ended in the 1977-1978 school year. During that period, all curricula and study programmes had been revised, thereby bridging the gap that existed between them and the current standard of science and technique. Much effort has been made to take into account, when developing new curricula, study programmes and teaching materials,

Diagram 1

CURRICULUM OF THE AZERBAIJAN REPUBLIC'S SECONDARY SCHOOLS (TUITION IN AZERBAIJANIAN)

Subjects	Number of lessons a week by forms										
	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
1. Azerbaijanian	12	10	8/9	5/4	4/5	3	3	2	—	—	47.5
2. Azerbaijanian literature	—	—	—	2	2	2	2	2	3	3	16
3. Russian language & literature	3	6/5	6	5/6	6/5	4	4	4	4	3	44.5
4. Mathematics	6	6	6	6	6	6	6	6	5	5/4	57.5
5. History	—	—	—	2	2	2	2	3	4	3	18
6. Fundamentals of the Soviet state and law	—	—	—	—	—	—	—	1	—	—	1
7. Social sciences	—	—	—	—	—	—	—	—	—	2	2
8. Natural sciences	—	0/1	1	1	—	—	—	—	—	—	2.5
9. Geography	—	—	—	—	2	3	2	2	2	—	11
10. Biology	—	—	—	—	2	2	2	2	1	2	11
11. Physics	—	—	—	—	—	2	2	3	4	4/5	15.5
12. Astronomy	—	—	—	—	—	—	—	—	—	1	1
13. Draughting	—	—	—	—	—	—	1	1	—	—	2
14. Chemistry	—	—	—	—	—	—	2	2	3	3	10
15. Foreign language	—	—	—	3	2	2	2	1	1	1	12
16. Fine arts	1	1	1	1	1	1	—	—	—	—	6
17. Music & singing	1	1	1	1	1	1	—	—	—	—	6
18. Physical culture	2	2	2	2	2	2	2	2	2	2	20
19. Vocational training	2	1	2/1	2	2	2	2	2	4	4	22.5
20. Elementary military training	—	—	—	—	—	—	—	—	2	2	4
Total	27	27	27	30	32	32	32	33	35	35	310
21. Days of practical lessons	—	—	—	—	4	4	4	—	17	—	29
22. Optional lessons	—	—	—	—	—	—	2	3	4	4	13

moral and didactic requirements, as well as the psychological possibilities of school pupils of different age groups.

Let us examine more closely the new curriculum of education in Azerbaijan, with some of its specific features that now characterize the study programmes and curricula of the republic's secondary schools. Diagram 1 gives a general idea of this.

The following changes have taken place:

— the weekly workload of pupils, especially in the first three forms, has diminished;

— more hours are now allotted to vocational training lessons, primarily in senior forms;

— new disciplines of great educational value, such as social sciences and the fundamentals of the Soviet state and law, have been introduced;

— optional courses have been added.

These changes have improved study programmes and curricula and made them more succinct and flexible. Surveys conducted in a number of Azerbaijanian schools revealed that an increase in the number of vocational training lessons had positive results. Pupils have greeted the introduction of optional disciplines with favour, and this has stimulated their interest in acquiring more knowledge.

The elaboration of and transition to new curricula and new textbooks proved much more complicated. It was particularly difficult to handle such a large quantity of material concerning numerous subjects. To do this, it was necessary to mobilize the best of scientific and pedagogical talent, specialists in many disciplines and to consult workers on the job.

Another difficulty concerned the upgrading of teachers' qualifications. It was important that all teachers without exception should be instilled with the general concept, the whole new idea, master new study materials and search for more perfect methods and forms of teaching.

A number of pedagogical and organizational measures had to be implemented. During the 1966-1970 period, all teachers attended crash courses to familiarize themselves with the principles of the new curricula and textbooks and how to use them. Study programmes and curricula were translated from Russian into Azerbaijanian. All curricula and 111 new textbooks were published in Azerbaijanian, of

which 70 were originals. Quite a few study aids, didactic materials, etc. were issued.

The universalization of secondary education, the transfer to schools of a new teaching policy, the modernization of teaching methods and the introduction of modern technical forms of teaching—all this enhanced the system of upgrading teachers' qualifications and perfecting their professional training. At present, promotion courses are functioning in five of the republic's advanced training institutes for teachers. Fifteen to twenty thousand teachers annually complete courses in these institutes, and also attend courses attached to pedagogical institutes and the university. This made it possible to raise the qualification level of teachers, as can be seen from Table 27.

Table 27

EVOLUTION OF THE QUALIFICATION LEVEL OF SECONDARY SCHOOL TEACHERS

Year	Total of teachers (000)	Educational level (percentage)		
		higher	secondary pedagogic	general secondary
1965	56	45.1	50.2	4.1
1970	66	51.7	44.2	3.9
1975	86	63.7	32.1	4.2
1980	99.4	70.6	26.6	2.3

We shall now cite a few examples that give a general idea of the basic principles and concepts which guided scientists, specialists and teachers in their elaboration.

One of the characteristic features of new curricula and textbooks is the desire to substantiate the fundamentals of scientific knowledge and adapt them with due account taken of didactic requirements. From the variety of scientific laws, theories, ideas and concepts in each science authors of textbooks had to select and adapt the fundamentals which were in line with the aims of communist education, the pupils' capacities according to their age and the development of their abilities. Although the elaboration of each subject cannot be an exact reproduction of its correspond-

ing science, the aim was for it to reflect the corresponding logic, taking into account the logic of the activities that children develop in discovering the world. Moreover, the methods used in each discipline had to find their reflection, to a certain degree, in school subjects, taking into account the capacities of the schoolchildren, according to their ages.

With a view to ensuring a systematic approach to the elaboration of study courses for each discipline, a group of ideas, principles and concepts was selected globally which made it possible to obtain and study a large amount of scientific facts. For example, the atomic-molecular theory of the structure of matter, molecular-kinetic and electron theory provided these global concepts for natural-science disciplines.

Curricula and study programmes devote considerable attention to the formation of concepts, especially in the early stages of learning. This enables the pupils to later assimilate with speed and facility political and scientific information. This explains, for example, why the concept of equations was transferred to primary school, to contribute to a better understanding by pupils of mathematical generalizations and to speed their progress in mathematics. The same can be said of the Mendeleyev periodic system which is now studied in the eighth form and not in the ninth as before.

The formulation of complex notions in textbooks is done gradually, stage-by-stage, and becoming gradually more difficult with systematic recapitulation. Such complex concepts as "the state", "class", "class struggle", "social system", etc. in history, "mass", "force" etc. in physics are being studied gradually, becoming more difficult with each new year.

The curricula of the science-mathematical cycle should reflect not only the basic principles of corresponding school disciplines, but also their development trends. As for the humanities curricula, their task is to form a dialectical-materialistic understanding of the laws of social development; they introduce school pupils to socialist social relations, contribute to their education in the spirit of communist ideals, prepare them for work morally, help pupils to ascertain their place in society and their responsibility towards it, and teach them to respect work, working people and work collectives.

Let us reflect on another merit of the new curricula: this is the idea of polytechnical education which permeates the entire process of teaching in the Soviet school, especially in the present period of scientific and technological revolution, which brings constant changes in the policy and organization of work, foresees the need to form pupils with a broad polytechnical vision, and the ability to adapt themselves to new techniques and technology, and the organization and production management. The implementation of the polytechnical principle requires the pupils to be familiar, in theory and in practice, with the basic principles and branches of modern production and a considerable improvement made in vocational training and education; the participation of pupils in socially useful and productive work, combined with studies; and the organization of a broad system of professional orientation.

The polytechnization principle is a keynote to all disciplines, but the main role belongs to the subjects of the mathematical sciences cycle and vocational training. The curricula and textbooks on these disciplines foresee the acquisition of the principal laws of nature and their application to modern industry and agriculture.

Particular attention is paid to instilling the pupil with the conception of the general scientific principles of production, on the familiarization with the basic trends of scientific and technical progress and the fundamentals of physics, chemistry, biology and mathematics.

Finally, a major feature of the new education policy was that in its elaboration special attention was paid to ascertaining the possibilities inherent in each school subject to form a scientific outlook of pupils, form a personality with high moral standards and foster strong civic sentiments.

Transition to the new policy was a great stride forward in improving the teaching process in Azerbaijan's general schools. However, this change, no matter how great, could not fully solve the problem of raising the teaching level. The surveys conducted and experience show that existing curricula and textbooks are still full of superfluous information and facts of secondary importance, which prevents pupils from acquiring habits of independent work. This is why work in this field continues unabated after transition to the new policy. A large group of scientific and pedagogical

workers is engaged in summarizing the results of the first years of work done according to the new curricula and textbooks. These results become a subject of long discussions during which concrete proposals and recommendations on improving curricula and didactic materials are advanced.

(d) Renovation of forms and methods

Radical transformations in the educational system of Azerbaijan, its aims and orientation could not fail to have an impact on teaching methods. The modernization of these methods, particularly the perfecting of the lesson—the generally recognized key to teaching and educational work—has become an urgent task.

The elaboration of a model modern lesson and methods of improving its efficiency are a constant concern of Soviet teachers and educators. What are the basic characteristics of a modern lesson? What criteria should be used in evaluating a lesson as a modern one, fulfilling the requirements put to it by science in accordance with the profound changes in the education policy and the imperatives of social development and scientific and technological revolution? What teaching methods correspond best of all to the new specific feature of education as permanent mass phenomenon for the whole of society? Discussions continue on all these subjects.

Let us take, for example, the correlation between a modern and traditional lesson.

In the words of a well-known Soviet educator, "a lesson is a more or less finite stretch, or a 'cell' of the pedagogical process. In the lesson all aspects of that process are reflected, as the sun in a drop of water. A considerable part of the science of teaching, if not all, is concentrated in lessons."[12] We would like to add that the lesson deserves a higher evaluation. It is not a "cell" of the teaching process, it's the very "core", its essential, decisive part. It is the main pedagogical part, that part which deals with the content, principles and methods of the formation and education of students. This is what determines the importance of the constant improvement of the lesson.

The modern lesson does not supplant the traditional

lesson or remove its rational content. Just like the traditional lesson, the modern lesson has a clear-cut didactic task and is, accordingly, carried out on a specific basis and a well-defined structure. But the modern lesson does not stop at this. It is much richer in content, methods and means and more complex in organization and conduct than the traditional: it demands from the teacher genuinely creative work, just as from the pupils. It also differs from the traditional in that it gives free scope to various types of teaching. Apart from the explanatory-reproductive method, which used to be almost the only type of the traditional lesson, the modern lesson practices such methods as programmed education, algorithmization of education, the study of simulated problems, reproductive-survey education, differentiated education and the individualization and intensification of education. It is also characterized by combining and implementing all the three programmed tasks: education, formation and developing pupils' knowledge of each subject in a curriculum. Moreover, modern technical means of teaching are widely used for lessons, something which was very rare in the traditional lessons. Such are its main features which help tackle the problem of improving education and formation.

To sum up, the modern lesson is a complex phenomenon. It requires various specific and perfected methods of teaching. It has to deal with the most complex sensitive and fragile creature in the whole world—a child or an adolescent. This infinitely complicated creature must be offered a rich variety of methods and approaches to its formation and education.

The Soviet school lesson must combine a respect for the rigours of scientific knowledge, and a solid ideological content and Party spirit. Soviet pedagogical science believes that without this there can be no talk of efficiency in education, no matter how well the lessons are conducted, methodically, logically and emotionally. There can be no unity in education and formation without the application of this principle. In our view, only a lesson of a high ideological and scientific level can create a solid foundation from which pupils will be able to obtain lasting knowledge. This scientific and ideological character of the lesson is the only way to carry out the most important functions of teaching, that

is, to educate and transmit knowledge.

An important place in Soviet pedagogical science is held by the question of control of the teaching process during the lesson. At one time it was held that this process should not be subject to control. Today, however, discussions are being held on the question of how to improve the efficiency of such control. Heated debates flared up around a new system of teaching based on the theory of what became known as the stage-by-stage formation of intellectual operations, elaborated by A. N. Leontiev. The essence of the system lies in that the process of teaching proceeds by stages—from the manipulations of objects through to the stage of their verbal expression followed by "mental operations". In short, it means that in the process of teaching, pupils work at first with concrete concepts and operation rules (for instance, for addition they first of all use sticks or other suitable items for the operation), then the same operations are conducted orally, and finally they are done mentally in order to cultivate comprehension and memory. The author of the system and its advocates maintain that the process of forming mental operations is strictly controlled by the system of methods and conditions used. Hence, in their view, it is possible to control it. Although this concept is not universally recognized by psychologists, experimental research has produced some positive results. There are also quite a few supporters of this theory among Azerbaijanian educators and psychologists.

The search for ways to control the teaching process also follows the line of programmed teaching in the republic. This is carried out in 40 specialized classrooms. Programmed teaching has basically the same features as stage-by-stage teaching. In programmed teaching the educational process is divided into "segments", as it were, and there is a real exchange between the teachers and pupils. At the outset, pupils receive information from the teacher, or other sources, while in return for this pupils give teachers information on his or her comprehension of the subject. The teacher thus knows exactly how to continue: to carry on further or to persevere until all the pupils have assimilated the information.

These exchanges (direct—"teacher-pupil" and return—"pupil-teacher") ensure better control over the mental

activity of each pupil. This means that the teaching process is more effectively controlled than under the previous traditional system.

Azerbaijanian teachers' and educators' efforts to improve the efficiency and quality of the teaching process follow the lines of the individualization of teaching. This principle is based on the desire to create a situation where all pupils in a given class show good results during a lesson. But what is to be done if they are not equally prepared and able to complete an exercise? The levelling of a class to the "average" pupil's capacity, widely practiced in our schools, does not always give the desired pedagogical effect. In the course of a lesson pupils making slow progress find it difficult to grasp material, whereas those making normal or fast progress are bored while the teacher is coping with the slower students. Hence, the need to "individualize" teaching, not in order to limit the degree of pupils' progress, but to make it possible for each pupil to go ahead according to his or her abilities.

The individualization of teaching does not abolish, but largely extends the principle of an individual approach. Although there is a connection between them, they are not alike. To take into account the individual abilities of students in the process of teaching means primarily taking into account aspects of the pupil's psychology who progress similarly. The individualization of teaching means chiefly taking into account the rate of progress of pupils in a class, when they do not all understand a task given them simultaneously and in the same way. This does not imply that such an approach signifies an individual curriculum and special teaching methods for each pupil. This is unnecessary and impossible. The individualization of teaching consists in pupils in a form being given a common problem, whose explanation is mainly geared to weaker pupils' abilities (individual difficult aspects of the problem are explained more in detail and in simpler terms, and are sometimes repeated). Tasks and problems are set in a differentiated way, that is, the same subject is given to all but with varying degrees of difficulty.

The "simulated problems" method has become widespread in Azerbaijanian schools. It is applied not only in senior and middle, but also in primary forms. Here are some of

the conclusions at which Azerbaijanian teachers, who promoted it, arrived as a result of using it in schools.

In one of the studies submitted to a special conference held in the republic and devoted to various methods of teaching, emphasis is made on the need to evoke an interest in learning in pupils, for this is the "driving force" of the intellectual process. "With this aim in view", the author of the study said, "I create a problem situation, face my pupils with the difficulties, thus forcing them to obtain additional knowledge. A pupil faced with difficulties makes the effort to think, directs his or her mental efforts to solving the problem set.

"The creation of such situations stimulates psychological processes in pupils. This is also part of our aim, one of the objectives of a lesson—to contribute to the all-round development of the pupils, especially of their intellectual capacities."

Another study presented read: "Experience shows that even the most advanced pupil often finds it difficult to apply the knowledge he has received. This can be explained by the fact that he is not active enough when acquiring knowledge in class. 'Simulated problems' teaching helps eliminate this factor. When it is applied, the cognitive activity of pupils is put to the fore. I try to stimulate creative search in pupils and teach them to reason. I organize the lesson in such a way as to create the necessity for research when new difficulties arise before pupils with contradictions between the knowledge they have acquired and new knowledge and the desire to solve a problem on the basis of the learning they have already acquired. I do not satisfy myself with accepting that my pupils have correctly solved the problem given them. I try to find out how they arrived at the correct solution..."

General schools in Azerbaijan are now widely using another method of teaching based on the theory that in conditions of scientific and technological revolution, sciences become increasingly and more rapidly intertwined, which results in the appearance of new scientific disciplines and fields of research. This is true not only of related sciences. Often, the solution of problems emerging within the framework of one or another discipline, and the development of the solution, becomes possible only through

the intervention of another, sometimes completely unrelated, as far as its nature and logic are concerned, scientific discipline. This is why teaching of practically any subject at school requires constant references to other disciplines and the use of their concepts and methods. This method of teaching is known as the inter-disciplinary approach. Without mastering it a secondary school teacher is unable to efficiently carry out his role in education and formation. The ability to apply this method, which requires great erudition in a number of related and unrelated disciplines, is now an important criterion of the evaluation of a teacher's qualification. This method has become an indispensable means by which pupils are taught the logic behind phenomena and things and the dialectic, materialistic aspect in general.

The method of inter-disciplinary connections does not have a merely academic aim; it is designated to fulfil the task of paving the way to solving one of the main problems facing teaching, namely, the establishment of close contacts between school and the outside world, the contact with life and day-to-day problems. This method thus becomes a necessary component of the principle of polytechnization and orients students towards the urgent problems of our day.

Finally, it should be emphasized that the importance of this method is also determined by the necessity to instil in pupils independence in studies and cognition, the capacity for independent work, a personal "knowhow" and the ability to make choices in the ever increasing scientific and political information. Training the pupils to reflect upon the strong ties linking various phenomena, which do not seem to have anything in common, is another angle under which this method continues to educate students.

When talking about pupils' personal work, one does not mean cognitive tasks only. As far as the Soviet general school is concerned, which, we know, is a vocational polytechnical school, the idea is not only to acquire knowledge, but also to instil the pupils with the ability to acquire independent work habits and do practical work in special training on plots of land attached to schools, to independently study modern machines and learn to tackle the tasks that will face them ultimately.

Attaching primary importance to the problem under review, Azerbaijan's teachers and educators directed their efforts to elaborating the theory of independent personal work. The introduction of methods facilitating pupils' independence in study and work is retarded by the lack of clarity on a number of theoretical aspects of the problem What are the characteristic features and significance o various types of pupils' independent work? What are th principles for their classification? What are the psycholo ical particularities of the cognitive activity of pupils various age categories? These and many other questio are now being intensively investigated by the republic scholars. In doing this, they are drawing on the rich exp rience accumulated by Azerbaijanian school teachers.

(e) The general school dilemma: institute or factory?

This dilemma has two aspects, or rather, is connecte with two factors. First, as we have already noted, th Soviet general school has for several decades been orientec to the training of the student body for higher educationa establishments. This could be explained by the historical conditions of the country's development, especially of its backward regions where there was an acute need for specialists. Moreover, the situation was such that at first schools could hardly keep up with the requirements of institutes and colleges for young men and women having sufficient education to continue their studies. It should be noted that such orientation produced favourable results for a time, and general schools succeeded in fulfilling this important mission.

However, a period has inevitably set in when the negative aspects of this one-sided orientation of school to colleges and institutes began to be felt strongly. This called for reorientation. This was felt most acutely in the 1960s, when the standard of education reached made it possible to envisage the task of the universalization of education at the second stage of secondary school. Naturally, the system of higher education was unable to completely absorb the constantly growing number of boys and girls finishing secondary school. We should add that it was inconceivable from the point of view of the country's requirements for

highly qualified specialists. As a result, many boys and girls who had not succeeded in passing entrance exams to institutes and colleges were disappointed and considered themselves failures.

There was another side to the problem. General school does not teach its pupils any concrete profession or trade. This means that those who cannot enrol in a higher educational institution must go out to work, without any particular trade or specialization. At the time, the situation was complicated by the fact that general school considered its main task that of preparing its pupils for continuing education, and because of this professional orientation suffered: it did not receive the attention it deserved.

The contradiction lay in that, while teaching through work, schools did not train their pupils to a concrete vocational activity. Although vocational education was still considered as a most important principle in the development of general schools, people tended to forget that this element of education work had to be complemented by another one—an efficient professional orientation which could help the so-called "failures" to rapidly find a place among industrial and office workers.

These undesirable phenomena had already become a matter of special concern in the 1950s. Attempts were being made to limit these shortcomings. At the present development stage of secondary school, this problem has received top priority.

Let us see how Azerbaijanian schools have coped with these processes and what is being done at present in this respect.

Table 28[13] shows the correlation between the number of senior-form pupils in Azerbaijan's general schools and the number of students enrolled in higher and secondary special educational establishments.

Table 28

CORRELATION BETWEEN SCHOOL GRADUATES AND THOSE ENROLLED IN INSTITUTES AND SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS

	1965	1970	1975	1979
1. General school graduates (thousands)	37.4	66.3	102.9	130.5

	1965	1970	1975	1979
2. Enrolment in institutes (thousands)	15.2	19.6	20.1	21.4
3. Enrolment in secondary specialized educational institutions (thousands)	18.1	24.6	25.6	25.6
4. Enrolment in institutes and secondary specialized educational institutions (thousands)	33.3	44.2	45.7	47.0
5. Correlation of 4. to 1. (percentage)	90	60	44	40

The data of the table are eloquent. In 1965 this problem was practically non-existent, for only 10 per cent of secondary school graduates did not continue education. Besides, it is quite possible that the majority of them had not intended to anyway; their aim had been to find work and help the national economy. After five years, the picture changes, and in recent years it has altered completely: 60 per cent of school graduates, that is, about 80,000 boys and girls, had to choose one or another type of employment.

All this indicated that general schools had to count with this and modify their former trend. They had to consequently elaborate and implement a number of measures in order to deal with newly emerging tasks. Azerbaijan's schools accepted this "challenge" and succeeded in obtaining quite a few positive results. On the whole, they fulfilled the task set them. The system of public education in Azerbaijan managed to arrive at the point where the school began to be included in the system of production, becoming part of the structure of the national economy.

This does not mean that the general school has become vocational or professional, assuming a function foreign to it, that of forming pupils with a specialized trade. The school retained its most important functions: to give its students an overall education, ensure their general development and enrich their cultural background. At the same time, the school had to radically improve professional orientation, give prevocational training to its pupils and reorganize the entire system for consolidating the link between school and employment and stimulating pupils to productive, socially useful work.

The reorganization of the functioning of Azerbaijanian schools, just as of all the Soviet school system for that matter, and the reorientation of its main functions consisted principally in searching for new forms of vocational education and formation and new methods of teaching which would allow secondary school graduates not only to obtain great knowledge but also to acquire training they can apply in work for the national economy. Great scientific research has been going on, side by side with practical measures implemented in schools, regarding this serious problem. This was due to the fact that vocational education is such a complex sphere that much in it is yet to be sorted out and requires a thorough and long examination. Another complex aspect of it is that some ideas and concepts, though generally recognized, cannot always be applied to the right degree.

The experience of Azerbaijanian general schools convincingly confirms the accepted theory that vocational education and formation should start at an early age, for it then results in greater efficiency. Another idea has also been proved experimentally and that is that vocational education must be conducted with strict attention paid to the age of the pupils. However, the question remains: what precise programme and under what form should it be studied by any one age group?

Vocational education in Azerbaijan's schools, while being a single process, is conducted in three stages, to satisfy three age groups: the first stage covers primary school pupils (the first three forms), the second stage covers the next five forms of incomplete secondary school, and the third stage, the final one, includes pupils of the terminal forms. Naturally, the volume of curricula and study programmes and the forms and methods of their presentation differ substantially, becoming more complete, complex and varied as the pupils advance in age.

Of special interest is the republic's experience in the implementation of measures aimed at a radical improvement of the vocational training of senior-form pupils of general school both in the towns and country.

In towns, vocational education is carried on mainly under three forms:

— A programme carried out directly at schools—in

workshops and groups of various types of manual work, for instance, mechanics and repairwork, typing, applied arts, and crafts etc.

In the 1978-1979 school year, about 11,000 senior-form students studied mechanics in 50 urban secondary schools. In 10 other schools, 660 pupils studied typing, modern clerical work and business correspondence. In 13 other schools, 500 senior students learned how to become telegraph operators. In 60 other schools, groups for studying local arts and crafts functioned, catering for 2,000 pupils. Many of them mastered their trade or profession to such a degree that they were issued special certificates.

— A second programme implemented in special training centres set up at firms or factories. This form of vocational training is rapidly growing. It the 1978-1979 school year alone, 30 such centres were organized at enterprises in Azerbaijanian towns, and the following year their number grew to 60. The advantage of this system lies in the fact that pupils familiarize themselves on the spot with the running of these enterprises. Experience shows that pupils show great interest in this type of vocational training.

— The third programme is implemented within the framework of work-study centres. Soviet educators believe this is the most successful form of combining teaching with employment found after prolonged searching and experimenting. This is a special complex for the study of production units catering for several schools in a city district. The type of training in each complex is determined, above all, by the requirements needed in the industrial and agricultural market and those required in a district or town. These complexes differ in principle from vocational training schools. The latter give their pupils complete vocational training in specific trades, whereas the former have the task of giving prevocational training for a trade chosen by the pupils themselves. These work-study centres help choose a future trade or occupation and prepare pupils to practise it.

It should be added that there are instances when pupils who have completed training in these complexes obtain their qualification and upon finishing secondary school leave to obtain jobs in industry or administration fitted to the training these centres gave them. Azerbaijanian educa-

tors maintain that this is a positive phenomenon, provided it does not impair the general educational standards of secondary school graduates.

The construction of these work-study centres proceeded at a rapid rate. In 1978, there were 58 such establishments, 48 being in towns, and in 1980 their total number reached 70. Senior students are taught more than 40 trades at these centres. Many regional concerns help finance and equip these centres. This not only eases the strain on the budget of public education, but also consolidates the ties between firms and factories and schools and raises the former's interest in the efficient functioning of work-study centres, a source from which they can acquire employees. This allows firms and industries to plan employment effectively and establish contacts with senior students who could later become their employees.

In rural areas work-study centres are being organized too, and conform to their specific requirements. Other forms of vocational training of senior students in rural schools are being used. The development and improvement of the republic's agriculture, the tasks connected with its evergrowing sectors, such as industrial cattle-breeding based on complete mechanization, call for the need to provide villages with educated people, people capable of handling modern agricultural machinery and handling modern, complex agricultural production. The aim of vocational training is to help solve this particularly important problem.

According to the data for 1979, there were about 4,500 workshops attached to secondary and eight-year schools in the republic, more than 1,000 rooms allocated to vocational training and about 3,200 experimental plots of land. All in all, about 140,000 senior students were trained. This amounted to 70 per cent of their total number. As for professional groups, they were divided in the following way:

industrial trades	16 per cent
agricultural trades	37 per cent
transport and communications	9 per cent
communal services	9 per cent
other trades	29 per cent

These figures show that general schools in Azerbaijan use

a great variety of ways and means for the vocational training of young people. They have a great deal of machines and equipment at their disposal. All pupils of general secondary schools receive vocational training and formation of one form or another. However, in 1979, about 30 per cent of the senior students were not given any real form of vocational training. Since then the percentage has dropped. But efforts still have to be made so that the system of complete vocational training is extended to include everyone.

These efforts should be directed at solving three problems:

— Create maximum favourable technical material conditions for vocational training in all Azerbaijan general schools and provide them with complete modern equipment for their workshops. For it is a shortage of material and technical means that hindered the extension of complete vocational training to all school pupils without exception.

— Improve the programmes of vocational training. Training instructors maintain that the existing programmes have too much superfluous material. A great part of the time is spent on this to the detriment of practical work. The programmes have subjects which are difficult to tackle even for technically equipped schools.

— Define and solve a number of principal theoretic questions which are also of practical importance for the development of the training system. A combination of study with productive work is an ideal of future society. This is accepted unanimously. Views differ, however, about how it is to be achieved. One should not simplify the problem, for example, by reducing it to combining study with participation in the production of any one item.

(f) Conclusions—Chapter V

This chapter tried to trace the "behaviour" of the Azerbaijanian general school during the transition period of its development, when quantitative growth over a long period led to a new situation requiring not only a revision of individual aspects of the given phenomena, but a new global approach to it from the point of view of the results achieved and the prospect of society's progress. During such periods,

classic criteria for evaluating phenomena are of no use, and solutions which only yesterday seemed the right ones do not give the desired result today. The transitionary period is also interesting in that it gives rise to new problems, brings to light shortcomings and failures and calls for a search for original solutions and their implementation. It is during such periods that particularly thorough scientific analysis of all factors that influence the prospects of a phenomenon and the character, content and main trends of its future development is necessary.

Soviet general school, particularly the Azerbaijanian school, lived through a crucial period of its development in the mid-1960s. Its prior development had prepared it for another step forward and set an important goal—to implement compulsory full secondary education. Although all necessary requisites have been reached in the republic to pass on to the next stage, that did not signify that it would be smooth going. As we know, solutions to some problems engender new problems, no less complicated. A new goal had to be achieved in a new historical situation, when the Azerbaijan republic, along with the whole of the Soviet Union had developed a socialist society on the model of intensive economic development that characterizes it.

It took Soviet Azerbaijan only one and a half decades to reach its target. It is a record time. In the near future, the republic will have to consolidate its achievements, muster its reserves, analyse results, remove shortcomings and continue its progress.

The new approach that had ensured success in the establishment of universal secondary education in the republic, was one that had consisted in solving it in its entirety. Such a great undertaking required the adoption of organizational, financial, economic and pedagogical measures, and they could not be tackled separately, each on its own. They were components of a single project and were interconnected. It was difficult enough to tackle them all simultaneously. But one of the achievements of the public education system of Azerbaijan was that it reached such a height during the period under review that it was able to do this.

Another characteristic of the universalization of secondary education was that it was not considered in the republic as a sectoral problem concerning only the public educa-

tion system. This problem also concerned the industrial and agricultural sectors, communal services, establishments, etc. What was essential was the fact that the drive for the implementation of universal secondary education became a concern of the entire nation, the entire economy. Not a single social group, no political, public or cultural organization remained indifferent to it.

[1] *24th Congress of the CPSU*, Novosti Press Agency Publishing House, Moscow, 1971, p. 229.

[2] *National Economy of the Azerbaijan SSR during 60 Years*, Baku, 1980, p. 65; *National Economy of the Azerbaijan SSR by the 60th Anniversary of the USSR*, Baku, 1982, p. 63.

[3] *National Economy of the Azerbaijan SSR by the 60th Anniversary of the USSR*, p. 67.

[4] *Fundamentals of the Legislation of the USSR and Union Republics on Public Education*, Moscow, p. 6.

[5] Estimated by the authors.

[6] Estimated on the basis of materials of the republic's statistics and reports of the Ministry of Public Education of the Azerbaijan SSR.

[7] *Public Education in 1978*, Moscow, 1979, p. 75.

[8] *Public Education in the USSR. Collection of Documents, 1917-1973*, p. 220.

[9] Magazine, *Voprosy filosofii*, No. 11, 1973, p. 32.

[10] "Marx an Ferdinand Lassalle", Marx/Engels, *Werke*, Dietz Verlag, Berlin, Band 30, 1964, S. 628.

[11] *Soviet School at the Present Stage*, Moscow, 1977, p. 62.

[12] L.N. Skatkin, *Improvement of Education Process*, Moscow, 1971, p. 149.

[13] *National Economy of the Azerbaijan SSR during 60 Years*, pp. 279, 289.

Chapter VI

IMPACT OF SCIENTIFIC AND TECHNOLOGICAL PROGRESS ON THE TRAINING OF SPECIALISTS AND SKILLED WORKERS

In the preceding chapter, we gave information on the main characteristic features of the present stage of the socio-economic, scientific and technological advancement of the Azerbaijan republic. An analysis of the data pertaining to general school revealed clearly that the changes that had occurred in its development, methods of teaching, policy of education, locations of the school network, etc. were closely connected with the evolution of the socio-economic environment within which it was functioning. As for the system of training specialists and skilled workers, these elements of public education are more closely and more directly connected with the national economy and society as a whole. The aim of this chapter is to explain these interconnections, the dynamic growth and changes to be observed in higher and secondary specialized education under present conditions, as well as changes in the system of professional and vocational training, the main channel for the training of skilled manpower. This analysis may help to perceive the new trends that have emerged in this sphere, as compared with the preceding stage dealt with in Chapters III and IV.

(a) Scientific and technological progress and the evolution of the structure of skilled manpower and specialists

The information on the Azerbaijan republic shows that scientific and technological progress is directly linked with

and actively stimulates the growth of society's intellectual potential; we are interested, above all, in the numbers and qualifications of intellectual workers. We do not mean only specialists, but also skilled workers whose job gradually becomes more intellectual. Simultaneously, working conditions are also changing.

At present, no one can deny these facts. It is true that foreign publications often refer to the lack of a clearcut correlation between, for instance, technological progress and the development of higher education. However, this can be apparently explained by the presence of other factors subject to other laws, thus preventing these connecting factors from being used. It is obvious that technological progress is not only established by the development of higher education. This is why there is nothing surprising in the fact that in some countries, for example, a sharp increase in the number of students and university and institute graduates is not accompanied by corresponding technological progress, and does not diminish but rather consolidates their scientific and technological dependence.

The presence of "obstructing" factors complicates analysis and the choice of criteria for comparisons. Nevertheless, the researchers have the material and scientific means and methods at their disposal to show connections and dependence between scientific and technological progress and the structure and evolution of skilled manpower. Let us look at the information obtained from consulting the official statistics of the Azerbaijan republic. They show a very interesting relationship between the growth rates of industry and the numerical strength of specialists (Table 29).[1]

The impact of scientific and technological progress is also felt by the fact that the quota of specialists is constantly rising in the total number of workers and office employees working for the national economy. This process is confirmed by figures concerning the Azerbaijan republic shown in Table 30.

Already by 1975, one in four industrial or office workers employed in Azerbaijan's economy had higher or specialized secondary education. In five years that figure had risen in favour of specialists. This is at once a reflection of

Table 29

GROWTH RATES OF INDUSTRY AND THE NUMERICAL STRENGTH OF SPECIALISTS IN THE AZERBAIJAN REPUBLIC (1960 = 100)

	1965	1970	1975	1980
Growth rates of total volume of industrial output	141	194	291	427
Growth rates of number of specialists employed in national economy	131	181	248	328
Breakdown by levels:				
with higher education	130	178	264	350
with secondary education	140	184	253	304

Table 30

EVOLUTION OF THE QUOTA OF SPECIALISTS IN THE TOTAL NUMBER OF WORKERS AND EMPLOYEES IN AZERBAIJAN'S ECONOMY*

	1960	1965	1970	1975	1980
A. Average annual number of workers and employees (thousands)	748	1,045	1,273	1,506	1,802
B. Number of specialists engaged in national economy (thousands)	152	205	275	377	499
Percent relation of B. to A.	20	19.6	21.6	25.0	27.7

* Calculated from the data: *National Economy of the Azerbaijan SSR*, pp. 156, 159.

scientific and technological progress and at the same time a sign of its impact on the training system of highly skilled specialists. Just as impressive are the data on the quota of specialists with a higher education in the total number of industrial and office workers in the national economy. In 1960, this category of specialists comprised 9.7 per cent of their number, and 20 years later, 14.3 per cent. In other words, in 60 years the Azerbaijan republic has reached such a level of economic, scientific and technological progress

that one out of seven workers and employees engaged in the national economy has a higher education.

It is a well-known fact that economic development today is impossible without scientific progress, the strengthening of the scientific potential and large-scale scientific research. Science itself has become a direct productive force. This is one of the major results of the developing scientific and technological revolution which covered all spheres of socio-economic life in Soviet Azerbaijan and exerts a growing influence on the pattern of the republic's socio-economic development, making it more intensive. Table 31 gives an idea of how the republic's scientific potential was growing and strengthening, particularly its major element—scientific personnel, specifically those of the Academy of Sciences of the Azerbaijan republic.[2]

Table 31

NUMBER OF SCIENTIFIC WORKERS

	1960	1965	1970	1975	1980
Total number of scientific workers, including scientific and teaching staff of institutes and Azerbaijan Academy of Sciences	7,226	12,350	17,082	21,280	21,923
	—	2,571	3,318	4,222	4,374
Those having doctor's or candidate's degree	2,172	3,328	5,998	8,017	9,093

It is important to note the constantly growing qualification level of the republic's scientific workers. This can be seen from the fact that in 1980 two-fifths of all scientific workers had degrees of doctor or candidate of sciences, as against 30 per cent in 1960. Another fact worth mentioning is the great role played by the Academy of Sciences, whose institutes conduct fundamental research work. About 20 per cent of scientific workers are employed by the Academy's research centres.

Economic, scientific and technological progress has a social aspect, namely that of attracting women to the labour

market. The decisive role in this regard is played by the character of society, its social and cultural policies. Table 32 gives an idea of the evolution of this sector.[3]

Table 32

THE ROLE OF WOMEN IN AZERBAIJAN'S ECONOMY, SCIENTIFIC AND TECHNOLOGICAL PROGRESS

Percentage of women among total number of workers:	
workers and employees in national economy	43
specialists with higher and secondary education in national economy	46
specialists with higher education in national economy	44
scientific workers	38
doctors and candidates of sciences	23

Scientific and technological progress and more especially the modernization of agriculture, which grew considerably due to the expansion of farms, have had a positive impact on raising the educational level of the population and lessening the gap between the urban and rural population. This is shown by Table 33.[4]

Table 33

EDUCATIONAL LEVEL OF AZERBAIJAN'S POPULATION IN 1979

Per 1,000 people of 10 years of age and over:								
People with higher and secondary education (complete and incomplete)			with higher education			with secondary education (complete and incomplete)		
total	urban	rural	total	urban	rural	total	urban	rural
652	727	561	85	97	26	567	630	535
Per 1,000 population employed in national economy								
832	879	774	—	155	46	—	724	728

A certain lag of rural areas behind towns was also seen in the share of specialists with a higher education. However,

compared with 1970 this gap has narrowed. In 1979 there were 3.4 specialists with higher education in towns as per one specialist with a higher education in rural areas, whereas in 1970, the figure was 4.3. To some extent this is apparently due to the fact that the proportion of work requiring relatively little qualification is considerably higher in agriculture.

The processes underway in the economy, in the system of public education, training of skilled workers and qualified specialists could not avoid having an impact on the evolution of the structure of the working population in the Azerbaijan republic. Let us examine this structure with regard to the distribution of the population employed in the national economy within the branches of productive industry and non-productive industry, comparing these data on the republic with estimates for the USSR as a whole (see Table 34).[5] Comparison reveals that in both instances evolution was of a similar character and proceeded along the same lines. The by-sectoral distribution of the population employed in the national economy is somewhat different, although there are no great distinctions as can be seen from Table 35.[6]

A comparison shows that although population structure in the USSR as a whole and in Azerbaijan is similar, there are certain differences in the proportion of employment in industry and agriculture. According to the data of Table 35, the proportion of the population employed in Azerbaijan's industry has been growing at a somewhat slower rate than in the industry of the USSR, while in agriculture, it decreased more slowly. At the same time the contents of both these tables clearly show that the republic now has a structure of working population typical of that of a developed and dynamic economy, corresponding to the growing requirements of scientific and technological progress.

(b) System of training of skilled manpower

At first, it had been decided that questions concerning the training of skilled manpower would be dealt with in separate chapters, following the logic by which chapters devoted to general school and higher and secondary specialized education were compiled. However, despite the

Table 34

DISTRIBUTION OF POPULATION EMPLOYED IN NATIONAL ECONOMY BY BRANCHES OF PRODUCTIVE AND NON-PRODUCTIVE INDUSTRY IN THE USSR AND IN AZERBAIJAN, STUDENTS EXCLUDED
(percentage)

	1965		1980	
	Azerbaijan	USSR	Azerbaijan	USSR
Total employed in national economy	100	100	100	100
In branches of material production (including cargo transportation, communications for production needs, trade and personal holdings)	79.2	79.8	72.6	73.9
including:				
workers and employees	47.2	55.9	53.4	66.7
collective farmers engaged in cooperatives and individual farming	29.7	20.9	16.1	11.0
members of factory and employee workers' families engaged in individual farming	2.3	2.9	3.1	1.2
other (peasants, artisans, etc.)	0.0	0.1	0.0	0.0
In non-productive branches	20.8	20.2	27.4	26.1
including:				
in public health, physical culture & social welfare; in public education, culture & the arts, science and scientific research	14.3	13.8	18.5	17.1
in other non-productive branches (housing & communal services; passenger transport & communications; state management; management of cooperatives and public organizations; loan companies and state insurance	6.5	6.4	8.9	9.0

Table 35

DISTRIBUTION OF POPULATION IN THE USSR AND AZERBAIJAN EMPLOYED IN NATIONAL ECONOMY BY BRANCHES, STUDENTS EXCLUDED
(percentage)

	1965		1980	
	Azerbaijan	USSR	Azerbaijan	USSR
Total employed in national economy	100	100	100	100
In industry & building	27.0	36	26.1	39
In agriculture & forestry (including individual farming)	38.8	31	33.1	20
In transport & communications	7.4	8.0	8.8	9
In trade, public catering, supply and sales of materials and warehousing	5.7	6	6.6	8
In public health, physical culture, social welfare, public education, culture & the arts, science & scientific research	14.3	14	18.5	17
In state management managing bodies of public & cooperative organizations, loan companies & state insurance	2.3	2	2.5	2
In other branches of the national economy (housing & communal management, communal services, etc.)	4.5	3	4.4	5

obvious importance of these questions, this idea had to be abandoned, for it was considered more expedient to deal with them in one section. The reason was, first, that the outcome would have appeared heavy, overloaded. Secondly, and this is the main point, vocational and professional training, although it was officially regarded as part of the public education system, had no close connections with it; both systems developed in parallel, as it were, without forming one. The situation began to change at the end of the 1950s and beginning of the 1960s, when technical and vocational education, as well as training skilled workers,

assumed a new function, that of a more thorough general education. This is why this section, after a brief historical outline, devotes its attention to the present stage of development.

The history of technical and vocational education is distinguished by a variety of approaches to finding ways for its development. During the early years following the establishment of Soviet power in Azerbaijan, a new type of training establishment came into being—a factory apprenticeship school with a three-year term of study. These schools enrolled adolescents with an incomplete secondary education. Later, as the cultural and educational level of the population grew, the period was reduced to between six and 18 months, depending on the skills. Lessons were organized in such a way as to allot 80 per cent of the time to training at the workbench, the remaining 20 per cent being devoted to theory. Another form of training skilled workers was the organization of what became known as training centres in plants and factories which specialized in teaching several skills. They were widespread during the early five-year plan periods, when requirements for skilled workers increased considerably, and there were not enough factory apprenticeship schools.

A characteristic feature of these schools and centres was that they trained personnel for the factories and plants which organized, supervised and financed them. In fact, these workshops were regarded as additional ones within the plants and factories.

The setting up of the first such schools was an important event in the life of Azerbaijanian young people. These schools laid the foundation for vocation training in the republic and enabled young people to acquire trades and remedy their technical ignorance. Tens of thousands of skilled workers have been trained in these schools.

Despite the fact that the system of technical and vocational education created by these factory apprenticeship schools yielded positive results, the need later emerged to reorganize it completely. This could be explained by the following. These schools functioned at plants and factories and training workers for them was their positive aspect. From the very start of their training, the future workers became familiarized with the production procedure and the

socio-political life of their plant, and they did not have to adapt themselves to employment when their training was completed.

At the same time, such training at plants and factories had some weak points from the viewpoint of providing workers for the various industries in a republic and planning long-term labour resources. It was difficult to provide skilled manpower for new industrial projects being built. Meanwhile, in the course of industrialization, with the growing number of new projects under construction, more and more workers of very diversified trades were needed. The factory apprenticeship schools trained workers of mainly mass trades—fitters, turners, etc.—whereas many branches needed highly skilled workers for leading sectors of production. As a result, despite notable successes in the development of technical and vocational education during those years, there was a gap between the rapidly growing requirements of a developing industry for skilled workers and the number of workers trained by factory apprenticeship schools. It was necessary to give a new orientation and a wider scope to the system of producing skilled manpower. It had to be able to satisfy the growing requirements of the economy and furnish a sufficient number of workers in accordance with increasing demands for high qualifications and the appearance of new professions and trades.

The foundation was laid in October 1940 by a decree published by the USSR Supreme Soviet Presidium "State Labour Reserves of the USSR", which read: "The task of further development of our industry requires a constant influx of new manpower for mines, transport firms, factories and plants. Without the constant growth of the working class any successful development of our industry is impossible".[7]

This decree laid the foundation for the creation of a new system of technical and vocational education in the country. It was supervised by the Central Department of Manpower Reserves under the Council of People's Commissars of the USSR, and by the departments of manpower reserves in the Union republics. Three types of training schools were organized to replace factory apprenticeship schools: apprenticeship schools, railway schools and on-the-job factory schools.

The first two types of schools enrolled boys and girls aged 14 to 15 and their training lasted two years; the third, boys and girls of 16 to 17 who were trained for six months. All graduates, after training, had to work for the state enterprises for four years.

In November 1940, based on 16 factory apprenticeship schools in Azerbaijan and the organization of new ones, 12 apprenticeship schools, two railways and 18 on-the-job factory schools were opened.[8] These 32 training centres of a new type enrolled more than 5,000 people.

Of great importance in the system of the republic's manpower reserves was the training of skilled personnel for the leading branch of the Azerbaijan economy, the oil industry. Let us simply mention that 19 apprenticeship and on-the-job factory schools out of 32 were training workers[9] for the oil industry.

The curricula of manpower reserve schools now had more hours devoted to industrial training. Emphasis was laid on a thorough mastering by the trainees of their future occupation. With this aim in view, industrial training was conducted there where the trainee would be working when he finished his studies.

The new system of manpower reserves has withstood the test of time. During the Great Patriotic War against Hitler's Germany, several thousand skilled workers were trained in these schools, including workers for the military sectors of industry. In postwar years, the network of these schools expanded still more: during the 1946-1960 period they trained 95,500 skilled workers. Almost all branches of the republic's economy were provided with manpower.

The strengthening of the system of state manpower reserves made it possible, in the early 1950s, to enlarge the sphere of its operation. Prior to 1953, its schools trained skilled workers for industrial branches, transport and building trade whereas now they began to train machine operators for agriculture. This necessitated the setting up of new types of schools.

Azerbaijan's economic development continued to grow. The republic's industrialization had increased and strengthened after the war. Industrial and agricultural output was increasing, technical and technological modernization in various branches of the economy were underway. This

resulted in a certain lag in the number of trained workers. Training schools continued to enroll boys and girls with mainly primary education. Meanwhile, it became clear at the end of the 1950s and beginning of the 1960s, that with all types of work becoming more complicated, young workers should acquire a secondary education. Without this basic education, the effectiveness of vocational training was hampered, it was difficult for the trainees who did not have sufficient education to master the fundamentals of their future trades.

The adoption of the law "On Strengthening the Ties of School with Life and on Further Development of Public Education" in 1958 and later on the transfer to universal secondary education opened new prospects for a greater influx of secondary school (complete and incomplete) graduates to technical and vocational training schools. At the same time the system of manpower reserves began to be accepted as a channel for the implementation of the programme of transfer to universal secondary education.

In the late 1950s, a reorganization of the workers training system began. It was becoming a component part of the country's education system. From then on, the system of manpower reserves was transformed into a state system of technical and vocational education. A State Committee of the Republican Council of Ministers on technical and vocational education was formed in Azerbaijan. It was entrusted the job of supervising industrial training and general education and formation in technical and vocational schools, their economic activities and their material and technical supply and construction. Workers' training was financed out of the republic's budget funds.

As a result of reorganization, various types of the manpower reserves schools gave place to a uniform type of technical and vocational training school: urban schools with a term of one to three years of training, and rural schools with a one to two years term, as well as evening classes and shift departments for workers attached to daytime technical and vocational schools. All these schools were based on the general education polytechnical eight-year school.

In 1962-1963, the transformation of these schools and training centres into identical urban and rural technical and

vocational schools was completed.[10] This was accompanied by a strengthening of the teaching and material base and an improvement in the selection of engineering and teaching personnel and organization and methods of education. New curricula and programmes as well as a new list of trades for training workers in schools and centres were introduced.

A rapid growth in the requirements of the national economy for skilled personnel demanded an expansion of the network of schools and centres and the enrolment of more students. By January 1, 1960, there were 34 various technical and vocational schools in Azerbaijan which were training about 7,750 people in 60 trades,[11] whereas by January 1, 1966, there were 36 urban, eight rural and two specialized schools training 17,900 boys and girls in 85 trades.[12]

Transfer to universal secondary eight-year education in the early 1960s resulted in a sharp increase in the educational level of technical and vocational school pupils. Previously, the majority of them had only an elementary education, whereas at the beginning of 1965, 14 per cent of the pupils of these schools and training centres had full secondary, and 80 per cent incomplete secondary (seven to nine forms) education. Only a small portion of pupils with a five- or six-year education were accepted in these schools and centres as an exception to the rule. All this made it possible to teach young workers trades requiring a high general educational level.

The system of technical and vocational education responded immediately to the transfer to universal secondary education that began in the Azerbaijan republic and the whole Soviet Union in the latter half of the 1960s. This resulted, among other things, in the setting up of a new type of educational establishment—technical colleges for young people with a full 10-year secondary education. Secondly, parallel to that a gradual reorganization of a part of the schools and training centres into secondary technical and vocational education institutions with a three- to four-year term of study began. Their aim was to train skilled workers with secondary education from among those who finished eight-year general schools.

When a decision was adopted in the early 1970s on completion of the universalization of secondary education, the

system of technical and vocational education was to take another step forward—to adopt measures for transfer to the training of workers with a secondary education. With this aim in view, the Central Committee of the CPSU and the USSR Council of Ministers adopted a decree in June 1972 entrusting the USSR State Planning Committee, the State Committee of the USSR Council of Ministers on technical and vocational education, the Councils of Ministers of the Union republics, ministries and departments "to envisage the further expansion of the network of secondary technical and vocational training schools, for elaborating the prospect of a long-term economic development with a view to gradually implementing the transfer of technical and vocational training to the training of workers having secondary education.[13]

As a result of reorganization and changes a modern system of technical and vocational training with a ramified network of training establishments has taken shape in the republic. The law on public education of the Azerbaijan republic defines its aims in the following way: the training of advanced, technically educated and cultured skilled young workers for the national economy of the republic, who have mastered trades answering the requirements of modern industry, and of scientific and technological progress, the implementation of general secondary education in secondary technical and vocational schools; the mastering of Marxist-Leninist world outlook by the pupils of these schools, instilling in them high moral qualities, communist attitude to work and public property and the desire to protect and multiply the revolutionary and labour traditions of the working class.

Table 36 gives an idea on how the network of technical and vocational schools developed in the republic.[14]

Table 36 shows, above all, a rapid increase in the number of educational establishments—almost 3.5-fold in 15 years. In 1981 their number reached 173. And the student body grew still more: up to 93,600, and in 1981, to almost 100,000, that is, about six-fold. Significant also is the guota of secondary technical and vocational schools. Almost two-thirds of graduates were in possession of a specific skill as well as secondary education certificates. In 1980, secondary technical and vocational schools and technical colleges

Table 36

GROWTH IN NUMBER OF TECHNICAL AND VOCATIONAL SCHOOL PUPILS IN AZERBAIJAN

Year	Number of institutions	Number of students (000)	Enrolment (000)	Graduation (000)
1966	46	17.9	15.0(1965)	9.4(1965
1976	135	66.8	56.5	44.6
1980	159	93.6	68.2	56.4
		Including data for 1980		
Daytime technical & vocational schools	149	90.0	60.8	50.5
Broken down as:				
technical colleges	39	19.9	23.3	19.9
urban technical & vocational schools	51	41.3	17.5	15.6
rural technical & vocational schools	59	28.8	20.0	15.0
Out of urban and rural technical and vocational schools:				
secondary schools	89	54.9	26.0	15.1
evening technical and vocational schools	10	3.6	7.4	5.9

accounted for more than 80 per cent of all pupils enrolled in daytime schools and centres. There was a pronounced trend to raise the educational level in the vocational and technical schools to that of complete secondary. Finally, it should be emphasized that rural technical and vocational training schools held an important place in the system—almost 30 per cent enrolled and more than a quarter graduated. They were the main source of trained mechanics for the agricultural industry.

The above means in effect that at present the majority of young workers joining the Azerbaijanian working community has an educational background of complete 10-year schooling. This is shown by a comparison between the curricula of general school and secondary vocational schools (see Diagram 2).[15]

Diagram 2

CURRICULA OF 9th AND 10th FORMS OF GENERAL SCHOOL AND GENERAL CURRICULA FOR SECONDARY TECHNICAL AND VOCATIONAL SCHOOLS FOR EDUCATION

Subjects	Number of lessons (hours)	
	In 9th & 10th forms of general school	In secondary technical & vocational school
Russian language and literature	280	230
Mathematics	350	349
History	245	245
Social science	70	70
Geography	70	39
Biology	105	43
Physics	350	339
Chemistry	210	210
Foreign language	140	140

A major distinctive feature and advantage of the modern system of technical and vocational education in the republic is that all educational establishments functioning within its framework are attached to industries or organizations where future workers receive their training. A special decree states that practical training should be organized, as a rule, at "advanced enterprises equipped with up-to-date machinery and technology and with a high level of the scientific organization of labour".[16] At the same time these establishments themselves are provided with modern machines, laboratories and study rooms, which creates the necessary conditions for professional training at a proper level. In Azerbaijan, for instance, according to data on the late 1970s, such training establishments had 1,039 equipped

study rooms and laboratories and 583 workshops for industrial training. In rural technical and vocational schools there were 688 tractors, 133 harvester combines, 64 units of excavating machines and 1, 623 various other agricultural machines. More than 3,600 instructors and foremen worked in technical and vocational schools, over two-thirds of them having a higher or secondary specialized education, the rest being highly skilled workers with long working records.

An integral part of the entire system of the training of workers is the upgrading of their skill on the job. In 1980, new trades and occupations were mastered by 62,700 workers, and 295,900 workers improved their skills. To have a better idea on the scope of this effort, mention should be made that there were 1,234,000 workers in Azerbaijanian industry at that time. It follows that about 30 per cent of all Azerbaijan workers were upgrading their skill in one form or another.

Teachers and instructors working in technical and vocational schools are also included in the system of upgrading qualification. The methods of raising their skill are many and varied. There are departments attached to institutes, trial periods arranged for them at firms, plants and construction sites, on collective and state farms, and various seminars, pedagogical and technical courses are organized. In 1980, these forms of upgrading qualification touched 30 per cent of those engaged in technical and vocational training: 2,134 out of 6,990.

Technical and vocational education in Azerbaijan, as in the entire Soviet Union for that matter, has a promising future. The republic has switched over to long-term planning for the training of skilled workers by trades. This will make it possible to effect, on a scientific basis, the specialization of educational institutions, improve their supply with technical material, improve the training level of pupils and establish closer ties between technical and vocational schools and centres and the industries to which they are attached.

On the subject of prospects for the 1981-1985 period, as far as the development of technical and vocational training is concerned, calculations are based on the need to fully provide all branches of the Azerbaijanian economy with skilled young workers who have graduated from incomplete

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secondary general schools. During the eleventh five-year plan period (1981-1985) it is envisaged to comlete transfer to a full secondary education for all workers in the republic.

(c) The development of higher and secondary specialized education

One and the same trend in the development of higher and specialized secondary education for the 1965-1980 period could be observed: during the first five years a rapidly increasing number of students enrolled in higher and secondary specialized educational institutions; subsequently, although the growth continued, its rates considerably dropped. This can be seen from the following data (see Table 37).[17]

Table 37

DEVELOPMENT RATES OF HIGHER AND SECONDARY SPECIALIZED EDUCATION

	1965/66	1970/71	1975/76	1980/81
Total of higher educational institutions	12	13	17	17
Their student body (000)	66.9	100.1	99.0	107.0
Students enrolled (000)	15.2	19.6	20.1	21.6
Total of secondary specialized educational institutions	66(1961)	79	78	75
Their student body (000)	55.8	70.8	72.3	79.0
Students enrolled (000)	18.1	24.6	25.6	25.6

The reason for a drop in the growth rate of the system of higher and specialized secondary education during the 1970s lies in the fact that by that time it had reached a level and size which enabled it to satisfy completely all requirements of Azerbaijan's economy. Previously, when there had been a lack of specialists, it had been necessary to develop higher and specialized secondary education at considerably greater rates than the rates of economic growth. Now there is no such need, a time has arrived when it becomes necessary to even the development rates of both the training of specialists and the national economy. Another reason

was that during the past decade special emphasis was made on raising the quality of education and on increasing the intensity of the training of specialists. In other words, the aim was to reduce the dropout rate of students, thus increasing the number of graduates without any considerable rise in the number of those enrolled. This is confirmed by the data of Table 38.[18]

Table 38

CORRELATION BETWEEN GROWTH RATES OF STUDENT ENROLMENT AND GRADUATION OF SPECIALISTS (1970 = 100)

	1980
Enrolment of students in institutions of higher education	110.2
Graduation of specialists from these institutions	131.2
Enrolment of students in secondary specialized educational establishments	104.1
Graduation of specialists from these institutions	124.8

During the 1960s the present structure of higher and specialized secondary education in Azerbaijan took shape and, in general, corresponds to the structure of the highly developed national economy of the republic. Judging by two important estimates—number of students and number of specialists graduated by groups of specializations—the most advanced trends of economic, scientific and technological progress began to hold an important place. In the 1980/81 school year, 20 per cent of the students of higher and secondary specialized educational establishments were being trained with skills in power engineering, machine-building and instrument-making, electronics, electrical engineering and automation, radio engineering and communications. Another figure shows that about 10 per cent of all students studied at departments of fundamental sciences. A similar picture could be observed with regard to the structure of the graduation of specialists from institutes and secondary specialized educational establishments. More detailed information about the evolution of the structure of the training of specialists can be obtained from Tables 39 and 40.[19]

NUMBER OF STUDENTS IN HIGHER EDUCATIONAL INSTITUTIONS AND GRADUATION OF SPECIALISTS BY GROUPS OF SPECIALIZATIONS

(at beginning of school year)

	Number				Graduation			
	1965/66	1970/71	1975/76	1980/81	1965	1970	1975	1980
Total	66,972	100,088	99,013	107,024	5,949	13,814	15,935	18,068
In groups of specializations:								
Geology & prospecting	930	1,610	1,386	1,370	74	299	199	183
Mining	794	1,529	1,548	1,674	96	66	184	209
Energy and power plants	1,808	2,949	3,065	3,193	101	230	311	410
Metallurgy	189	474	330	467	—	42	64	63
Engineering & instrument-making	5,190	6,730	6,668	9,287	378	709	699	1,048
Electronic engineering, electrical engineering and automation	4,833	4,331	4,556	6,599	306	721	615	713
Radio engineering & communications	1,118	1,286	1,169	1,491	31	160	99	201
Chemical technology	3,026	3,288	2,254	2,063	187	451	296	293
Forestry, engineering & wood pulp, cellulose & paper technology	—	—	98	171	—	—	—	41
Food industry technology	—	805	517	1,157	—	—	109	86
Consumer goods technology	1,402	2,449	1,230	1,472	30	293	248	194
Building	3,201	6,157	6,460	7,263	349	597	787	1,041
Geodesy & cartography	—	—	50	164	—	—	—	38
Agriculture & forestry	4,831	5,633	5,068	6,502	449	1,367	847	935
Transportation	1,322	1,900	1,601	1,851	138	200	164	292
Economics	6,236	11,745	11,008	1,361	550	1,752	2,083	2,095
Law	634	1,044	1,427	1,375	76	62	140	224
Public health & physical culture	4,546	7,409	8,510	8,413	628	730	1,280	1,429
University specialists	6,801	9,381	10,040	10,085	871	1,134	1,361	1,701
Specialists for pedagogical institutes and cultural institutes	19,111	30,099	30,694	29,772	1,592	4,851	6,229	6,596
Arts	1,000	1,269	1,334	1,291	93	220	220	276

Table 40

NUMBER OF STUDENTS IN SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS AND GRADUATION OF SPECIALISTS BY GROUPS OF SPECIALIZATIONS
(at beginning of school year)

	Number				Graduation			
	1965/66	1970/71	1975/76	1980/81	1965	1970	1975	1980
Total	55,780	70,770	72,256	79,000	9,448	18,140	18,965	22,650
In groups of specializations:								
Geology & prospecting	143	644	744	677	25	75	154	143
Mining	1,020	1,669	1,284	1,300	181	259	329	286
Energy and power plants	1,873	2,824	3,508	3,658	363	547	739	861
Metallurgy	894	228	453	902	97	74	81	150
Engineering & instrument-making	4,643	5,971	6,518	8,066	580	1,210	1,296	1,704
Electrical engineering	3,245	1,258	1,452	1,787	274	255	276	383
Radio engineering & communications	2,045	2,642	2,686	2,392	137	408	555	709
Chemical technology	2,511	2,463	2,475	3,114	318	580	553	669
Forestry engineering & wood pulp, cellulose & paper technology	215	373	341	418	82	79	91	112
Food industry technology	1,737	3,068	2,738	2,847	215	524	664	733
Consumer goods technology	1,729	2,398	2,705	3,225	206	426	563	779
Building	3,164	5,593	7,135	7,237	494	1,062	1,624	2,096
Geodesy & cartography	104	147	320	380	18	20	31	98
Agriculture	8,331	8,852	7,898	9,393	1,893	2,639	2,341	2,839
Transportation	4,224	4,726	4,800	5,818	451	1,357	890	1,485
Economics	4,846	8,917	8,814	8,800	934	2,589	2,705	3,398
Law	—	—	—	118	—	—	—	54
Public health & physical culture	7,615	8,609	8,122	7,578	2,081	3,071	3,132	3,069
Public education	5,645	7,117	6,656	7,610	874	2,440	2,207	2,214
Arts	1,796	3,071	3,577	3,680	225	525	734	868

The data in these tables require some additional comment.

In the latter half of the 1960s growth rates of both estimates were especially high. Subsequently, they were maintained at a sufficiently high level, especially in the four groups mentioned above, whose development was connected with the spreading of the scientific and technological revolution and its penetration into all sectors of production.

The technical and technological modernization of production, total mechanization and automation and the implementation of scientific and technological achievements produced a growing demand for specialists for the following sectors—electronics, electrical engineering, automation, radio engineering, etc.

An increase in the number of students in economics is conneceted with the fact that the latter began to play a leading role in production management at the present high stage of industrial development. In the building sector the similar trend has been provoked by a huge increase in construction work.

In the late 1960s, trained teaching staff had reached the quota where it could fully satisfy the requirements of public education in the republic. This is why there was no need to increase its growth rates. The same can be said for several other specializations.

Intensification of agriculture, the need to increase its productivity and a rise in the proportion of intellectual work in agriculture called for a considerable expansion of the training of specialists for this vital sphere of the national economy.

What characterizes the present development stage of higher and secondary specialized education is the attention given to the training of specialists for the sector of material goods production. Skilled personnel working in these branches is a prerequisite for solving such major tasks facing society as the raising of living standards to satisfy the peoples' material requirements. The growth of productivity, improvement in the organization and management and the increase of intellectual work in production are impossible without increasing the number of technical intelligentsia and especially its proportion among the working population. Higher and secondary specialized education in Azerbaijan,

just as in the Soviet Union as a whole, is developing on a planned basis as a component part of the entire economic complex closely connected with society's economic and cultural life.

Here are some figures relative to the structure of specialist training and resulting from the following study: the distribution of graduates by sections of educational institutions (see Table 41).[20]

Table 41

EVOLUTION OF THE GRADUATION OF SPECIALISTS
(1965 = 100)

	Higher education		Secondary specialized education	
	1970	1980	1970	1980
Total of specialists graduated from educational institutions	232	308	192	240
Broken down as:				
Engineers	223	293	—	—
Technicians	—	—	201	290
Specialists in agriculture	345	218	153	175
Public health, physical culture and sports	135	280	145	148
Specialists in public education	193	267	288	237
Specialists in economics and law	1,452 (1960 = 100)	1,880	269	401
Specialists of the arts and cinema	303	400	227	384

The data of Table 41 confirms the above conclusions. We shall now mention two other considerations. It is normal that during the period of scientific and technological revolution more attention is being paid not only to the training of engineers and technicians, but also to a satisfactory situation in the growing cultural requirements of society. This was translated, among other things, by specialists for the development of culture, the arts, public health and physical culture and sports being trained at a fast rate. Spe-

cial attention is paid to social sciences. It is in the interests of society that the system of public education should have the aim to not only train a highly skilled specialist, but also educate him or her to become a member of society with high principles, loyal to communist ideals, convinced of the final triumph of peace and social justice as defined by man and opposed to exploitation, evil and ignorance.

Finally, we should also note that in the system of higher and secondary specialized education, an ever greater role is being played by the social task of raising the cultural level of the population and satisfying the social requirements of those who wish to study to acquire more knowledge. Here lies the reason why evening classes and correspondence courses give as much attention to socio-cultural orientation as to professional formation, their primary task.

In its present stage, the system of higher and secondary specialized education in the Azerbaijan republic is characterized by large development. The republic's institutes and university facilities train experts in 158 specializations. Both in number of students and specializations, Azerbaijan holds one of the leading places in the USSR. Though the republic is able to satisfy its requirements for specialists of high and average qualifications, thousands of boys and girls from Azerbaijan are studying in Moscow and other Soviet cities. According to data for 1980, more than 3,300 students from the republic studied in 152 institutes and colleges in 46 Soviet cities, thus acquiring 244 specializations. This training is being done within the framework of inter-republic cooperation, especially as regards the lesser developed specializations. On the other hand, quite a few specialists are being trained in Azerbaijan for other Soviet republics. Azerbaijan has now a large section of the working intelligentsia, numbering about 260,000 specialists with a higher education and 240,000 with a secondary specialized education; among them are about 70,000 engineers, more than 78,000 technicians, 120,000 teachers graduated from the universities of culture and the arts, and more than 50,000 teachers, librarians and other cultural workers with a secondary education, as well as a great many agronomists, economists, doctors, lawyers, etc.

(d) Specific features of the organization of studies

The more complex the socio-economic, cultural and pedagogical tasks and problems facing the system of higher and secondary specialized education and the more complex the mechanism of functioning of the system and its management, the more important the questions of scientific organization of the study processes. This applies to the present development stage of higher and secondary specialized education in the Azerbaijan republic. Specialists being trained in Azerbaijan today, combine an extensive knowledge with the ability to think creatively and work independently, acquire even more knowledge, orient themselves correctly from the avalanche of information available and, at the same time, adapt rapidly to the constant changes in production and daily life. Organization of the study procedure on a scientific basis contributes to the formation of such specialists.

Organization of the study procedure in educational institutions training specialists begins with the selection of future students. This is a very important stage, for success in the training of specialists depends on the quality of the student body. The main aim of this initial stage of the study procedure is to select those whose knowledge corresponds to the level required and ascertain the validity of the student's vocational guidance and ultimately to reach a balance between the interests of the state and the interests of the student within the system.

In Soviet institutes and colleges the selection of future students consists of three elements:

— Constant connection maintained between educational establishments and general school, young people working in industry and agriculture, and units of the Soviet Army. This connection takes the form of explanatory work aimed at helping young people to orient themselves towards future occupations and professions and, consequently, the right educational institution; the familiarization of young people with the types, difficulties, aims and methods of studies, with laboratories, etc. through organizing so-called "open days", preparing lectures on one or another specialization and attracting pupils to various scientific and technical groups thus stimulating their natural inclinations and bent.

— Entrance examinations, which are obligatory for everyone wishing to enroll in a higher educational establishment. Every Soviet citizen up to the age of 35 with a complete secondary education has the right to take entrance exams at day departments, as for correspondence courses or evening class departments, there is no age limit. Enrolment in Soviet educational institutions is based on the numerus clausus principle, according to which each department accepts a strictly limited number of students, which, once determined, is officially publicized. Entrance examinations are thus competitive. Those who obtain the highest marks are enrolled.

— Preparatory departments have been functioning at higher educational establishments since 1969, and a wide network of courses is attached to secondary general schools, offices, industrial firms, collective and state farms. In enrolling students, preference is given to those who, after graduating from a secondary educational institution, have acquired two- to three-year's working experience in the field in which they wish to continue. As seen from a special survey, this category of students shows greater degree of independence, give more thought to choosing their profession or occupation and adapt better to life in colleges or universities. At the same time, they sometimes show a lack of knowledge during entrance exams, as compared with graduates freshly out of school. This is logical for during their working career they have forgotten much of their theoretical knowledge. These preparatory departments aim at helping young people with a working record to enroll at institutes or universities. This is also a form of encouraging worthy young workers and farmers who are selected by their employers to attend preparatory departments for subsequent enrolment in colleges and institutes. This practice is a logical one, for firms and offices are concerned in the successful studies of their candidates, inasmuch as upon completion of their course of study, they will return to work there.

The key issue of the study procedure in higher educational establisments is to define contents and policy, as well as its forms and methods. These problems are defined by the following factors:

—At the present time, which is characterized by a deep

penetration of the scientific and technological revolution in all sectors of society's activity, the dual process, inherent in the development of science, namely, knowledge becoming obsolete and knowledge emerging, has accelerated. Hence, the necessity to not only review periodically the contents of educational matter but also to rapidly renew curricula, and study plans and methods, carefully select information given to students and optimize its volume on a scientifically substantiated and rational basis.

-- These phenomena do not happen simultaneously: the volume of new knowledge grows more rapidly than old knowledge is becoming obsolete. However, the material included in curricula cannot be continuously augmented. The volume of curricula in all major scientific disciplines has already reached the rational limit. It is not advisable, however, to prolong studies. Lastly, not all new knowledge in one or another discipline should be included in curricula straight away. A higher educational institution cannot and should not instill the future specialist with knowledge that will last a lifetime. It follows, therefore, that it is necessary to determine what type of knowledge should be included in curricula and study plans and what type could be acquired independently later on, during the specialists' working career.

— When put into practice in higher educational establishments, this is shown by strengthening of the study procedure, which is inevitably accompanied by a strengthening of the teaching methods by both their improvement and the use of the latest technical means of education. The aim is for the teacher's influencing action upon the student to have a more effective, active and productive impact in order to instill the latter with the ability to make a thorough study of the subject matter and teach him to work independently and creatively.

In tackling these problems, the system of Soviet higher education has worked out a number of practical solutions which are being improved in the course of their implementation. The Azerbaijan system also deals with these problems.

The principal problem facing this system for the improvement of the study procedure is the idea of forming a versatile specialist, something that is already being elaborated on a model basis in various educational institutions. It

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should be emphasized that this does not mean the training of specialists on general or theoretical subjects. There is also no intention of cramming the future specialist with general information on everything, without providing him with concrete professional knowledge. As stated in the work *Scientific and Technological Revolution and the Development of Higher Education*, "a versatile specialist is one who is well-trained in both theory and practical experience for dealing with the main problems of his specialization."[21] We should add that the amount and quality of the knowledge he acquired permit him to orient himself easily from an avalanche of the most varied information, to distinguish the essential from the superfluous and to use it accordingly in tackling practical questions.

The model of a versatile specialist consists of carefully selected elements which should be defined, in the course of implementation, by the type of educational institution, department, scientific discipline, etc. These elements should answer the following basic questions:

—What is the range of problems and tasks facing the versatile specialist in his work? An optimal requirement is that of being capable of taking corresponding measures to comply with the trends of scientific, technological and industrial progress.

—What should the rational correlation be between the fundamental sciences, general specialized disciplines and highly developed specializations within the curricula? This question should be considered within the structure of any given vocational institution as well as for each speciality, specialization and scientific discipline.

—The allocation of time for theoretical studies, practical work in laboratories and firms, etc., should correspond to the study courses, and indication should be given as to the order in which these should be conducted.

Take, for example, as new a speciality as electronic engineering. Requirements for electronic equipment are rapidly growing both in industry and everyday life. The training of specialists in this field holds an important place in the republic's structure of higher education. Soviet specialists studying the specific features of the training of electronic engineers in this period of scientific and technological revolution, have come to the following

conclusions as to the general requirements with which such specialists should comply.[22]

—A good knowledge of fundamental sciences (physics, mathematics, chemistry, etc.);

—The mastering of computing techniques;

—Rapid adaptability to the developments in science and technology.

These requirements are laid down in the following structure of the curriculum (in percentage of time allotted to theoretical training):

Physics and mathematics (including chemistry, physical chemistry and the study of the properties of micro-electronic material	up to 40
General engineering training	up to 10
Electrical and radio-engineering	up to 15
Special training in micro-electronics	up to 15
General scientific disciplines	up to 20

Although the study procedure in higher educational institutions is of a limited duration, ending with the presentation of a thesis and final examinations, it is nonetheless closely connected with the future work of a young graduate. As for immediate prospects, the contents of the study procedure is being elaborated with due account taken of the fact that after graduation all Soviet specialists follow trial courses at firms, and institute instructors have necessarily participated in preparing the programmes for such courses. In the more distant future, study plans and curricula take into account the imperative requirement of Soviet specialists to update their qualification by following "refresher" courses at least once every five years. The aim is to remove from the curricula everything which can later be studied independently by various forms of upgrading skill and qualification. This idea is just beginning to be implemented in Azerbaijan's institutions of higher education.

This connection between institute curricula and post-graduate studies, taking the most varied forms, outlines the model of a versatile specialist and a strengthening of the study procedure. This is the central factor in the concept of continuous education which is being elaborated and implemented.

(e) Management problems: relations between central and local bodies

The management of public education in the Azerbaijan republic has taken form after a rather long period of incubation. It has undergone reorganization in accordance with the changes occurring in public education itself, in its task and aims, along with the development of its scope and structure. It continues to be improved upon. The modern structure of public education management in the republic is shown on Diagram 1 in the Appendix. In this section, we shall study some underlying principles of this management, for example, relations between its various levels.

As shown by Diagram 1, responsibility for the development of different levels of public education and the training of manpower and specialists rests with three of the republic's authorities: the Ministry of Education which supervises general school and the training of its teachers; the Ministry of Higher and Secondary Specialized Education, which supervises corresponding educational institutions, excluding agricultural, medical and certain others which are under branch ministries; and the Committee on Professional and Technical Training in charge of training skilled workers. The activities of these three bodies are similar in their principles except for certain specific features concerning the functioning of each.

What are the relations existing between the republic's managing bodies of public education and the central all-Union bodies, on the one hand, and the management of individual educational institutions, on the other? How are duties and responsibilities divided between them? We shall now examine these questions using the example of one of these bodies, the Ministry of Higher and Secondary Specialized Education of the Azerbaijan republic. Its present structure took form in the late 1950s and early 1960s, at the beginning of the present period of the socio-economic, scientific, technological and cultural development of the republic.

The new system is based on two principles: centralized supervision and self-management. The former is determined by the need to constantly coordinate the development of the system of personnel training with the requirements of developing society as a whole. The principle of self-manage-

ment is based on taking into consideration the specific character of the work carried out by specialist training personnel. This is mainly relevant to institutions of higher education where teachers and instructors spend considerable time on research as well as on pedagogical duties. The principle of self-management has, in each case, to take into account the particularities of the work carried out by the entire teaching profession.

The federative character of the multinational Soviet state means that the management system of educational institutions in the republics should not be examined separately from the management system of specialist training throughout the country, for centralization of supervision in this sector is maintained on a countrywide level.

Single laws for the country, including those determining the functions of higher and secondary school, are issued by the USSR Supreme Soviet, the highest legislative body in the Soviet Union. At the same time, the Supreme Soviet of the Azerbaijan republic—the highest legislative body in the republic—issues acts determining the main trends of the work of higher and secondary specialized educational institutions in the republic. The laws voted in the republic correspond in principle to the all-Union legislation, but they take into account the specific local conditions.

The executive body effecting management and control over the training of specialists in the Soviet Union is the Ministry of Higher and Secondary Specialized Education of the USSR. It effects overall organization and regular supervision of all higher and secondary specialized educational institutions in the country, irrespective of their branch affiliation. In the Union republics, this management and control is implemented by the republic's ministries of higher and secondary specialized education.

The USSR Ministry of Higher and Secondary Specialized Education examines the current and long-term requirements of various branches of the national economy for specialists on a countrywide scale. It then elaborates and submits to the USSR State Planning Committee the drafts of annual and long-term plans of their training and determines and endorses the list of specializations in higher and secondary specialized educational institutions. The responsibilities of the Ministry include: scientific and regular supervision

of the teaching and formation of students, the elaboration of measures for improving the study procedure and forms of specialist training, the drawing up and endorsement of enrolment rules and rules of production training of students, and state examination boards, curricula, programmes and other standard materials of an organizational and methodical nature, the publication of textbooks, methods and scientific literature. An important function of the Ministry is the opening of new institutes and secondary specialized educational institutions and endorsing the nomination of rectors of institutes and universities. The Ministry is also responsible for organizing the system of upgrading teachers' and instructors' qualifications, for coordinating and planning scientific research in institutes and universities and maintaining ties between Soviet and foreign institutions of higher education.

Orders and instructions from the Ministry of Higher and Secondary Specialized Education of the USSR must be carried out by all higher and secondary specialized educational institutions in the country.

Determining the main development trends of specialist training in the Soviet Union, the Ministry of Higher and Secondary Specialized Education of the USSR entrusts the republic's ministries of higher and secondary specialized education with the responsibilities of carrying out nationwide state policy in the field of specialized education in the Union republics. Naturally, the size of the Soviet state necessitates an additional link, that of the republic, in the system of supervision of educational institutions. Of great importance also is the fact that socialist society is distinguished by the constantly growing tendency toward transfer to local bodies of some of the functions carried out by federal ministries and departments, the democratization of management, the search for a more rational correlation between the various levels of management, in short, a tendency toward a fuller implementation of the fundamental principle of socialist management—democratic centralism.

The Ministry of Higher and Secondary Specialized Education of the Azerbaijan republic working under the guidance of the all-Union Ministry, has much power. Within the structure of the republic, it assesses the current and

long-term requirements of the republic's economy for specialists, elaborates drafts of current and long-term plans of their training and submits them to the republic's Planning Committee, coordinates the work of institutes and secondary specialized technical schools following the needs of the republic's economy and culture and supervises the implementation by educational institutions of instructions and rules of an organizational and methodical nature. The republican Ministry also publishes textbooks and other educational, scientific and methods literature, mainly in the native language.

Fulfilling the republic's requirements, the Ministry initiates the opening of new higher and secondary specialized educational institutions and submits relevant material to the USSR Ministry of Higher and Secondary Specialized Education for consideration. The republican Ministry plans and coordinates the training of teachers, instructors and researchers, workers for the republic's institutes. It also supervises the work of the postgraduate courses of institutes and universities and coordinates and plans research in Azerbaijan's higher educational institutions.

The republic's Ministry, in agreement with the all-Union Ministry, sends young people to institutes in other republics to acquire specializations lacking in Azerbaijan. The republican Ministry also chooses candidates for rectorships and, the principals of educational institutions.

It is clear from the above that the republican Ministry has great power. Its main purpose is to maintain the correlation between the development of the system of training personnel and the character, rates and particular features of the development of the republic's economy. Being a link in the all-Union system, the republic's Ministry of Higher and Secondary Specialized Education is, both in its form and content, a truly republican body. It carries on its activity according to the laws of the Supreme Soviet of the Azerbaijan republic, and the minister of higher and secondary specialized education belongs to the Council of Ministers of the Azerbaijan republic.

The modern structure of management of higher and secondary specialized educational institutions in the USSR is based upon the general (national interests and requirements of all Soviet republics) and the particular (concrete

development requirements of these republics).

Let us now see how the republic's Ministry supervises the running of the institutions of higher education. Apart from general guidance, the Ministry selects the members of the rector's council, the highest body of administrative management in the institute and university. It consists of the rector and his assistants. Rectors and assistant rectors are appointed from among the most qualified and experienced research workers and teachers.

The rector's council has great power: control over the implementation of curricula and study plans, as well as research programmes and supervision of ideological educational work. The rector's council is also responsible for teaching methods and studies carried out by chairs of social sciences as well as those outside the faculty.

The rector's council makes the decisions on questions connected with enrolment, graduation, expulsion and reinstatement of students and postgraduates. The rector is also the chairman of the selection committee and directs job finding for graduates.

The rector is in charge of the elaboration and implementation of practical measures ensuring good working conditions at all stages of the study procedure to develop the educational and material resources of his institute.

The rector's office is an official scientific and administrative-managerial body. In the Soviet Union higher educational institutions, a great role in organizational and managerial matters is played by the self-government system, whose leading body is the council of the institute or university. It includes members of the rector's council and leading chairs, representatives of public organizations, top scientists and teachers. The council concentrates its efforts on such key questions as improvement in teaching and educational work, supervision of the publication of educational and scientific literature prepared by the institute or university and discussion and endorsement of plans of work. All the council's decisions are mandatory.

The council participates in the selection of teaching staff. It holds entrance exams for chair holders and professorships, as well as for all teaching posts in social sciences and other chairs. It also recommends candidates for scientific degree awards.

The main educational and scientific unit of the institute or university—the chair or department—has its own rights and powers based on the principles of a single managing body, discussing establishment matters collectively and self-government.

The existence of these two management bodies in institutes—the rector's council and the institute's council as well as other administrative and public bodies—ensures a harmonious combination of the principles of one body management and the collective nature of governing such a complex organization as the institution of higher education.

Self-government is a fundamental element of higher educational institutions. Along with the principle of centralization, it forms the basis of the entire system of management of Soviet educational institutions. The consistently democratic character of this system means that each section, each teacher, instructor or research worker in an educational institution must be responsible for the work he or she is doing, and stimulates creative activity and initiative in tackling the important tasks facing them.

(f) The foreign ties of Azerbaijan's school of higher education

Soviet Azerbaijan, a republic which prior to the establishment of Soviet power did not have a single higher educational institution and whose economic, scientific and technological development level was no higher, and in a majority of cases even below, that of newly independent countries, has now become a large centre within the Soviet Union for training specialists for foreign countries. Azerbaijan maintains regular contacts with other countries in the fields of science, education and culture, which are constantly expanding and taking on new forms. These connections are largely oriented to developing countries, are of a disinterested nature and are aimed at strengthening their scientific-technological potential. At the same time, firm contacts have been established between Azerbaijanian educational institutions and similar institutions in socialist and even capitalist states. We shall now see how these contacts were established with developing countries.

Pride of place is taken by the training of specialists for these countries. This is being carried out in Azerbaijan

itself where hundreds of young people from developing countries come to study annually, and in the countries themselves, where many Azerbaijanian professors and instructors are working at educational centres.

Initially, many countries sending their young people to Azerbaijanian educational institutions, were prompted, above all, by the possibility of having personnel trained for the oil industry. They justly believed that Azerbaijan had accumulated a great deal of experience in that field. This was why the overwhelming majority of foreign students studied at the Azerbaijanian Institute of Oil and Chemistry which, along with Azerbaijan's State University, had become the principal base for the training of specialists for developing and other countries. Special departments for teaching foreign students have been organized in these institutes. In 1961, the Institute of Oil and Chemistry opened a preparatory department which in its first nine years of existence trained more than 1,800 people from 32 Asian, African and Latin American countries for subsequent enrolment in Soviet institutes.

Gradually, many countries became aware of the fact that the Azerbaijan republic had the potential for providing specialized education to foreign students in many fields. It possessed indeed all the necessary conditions. There are comfortable hotels, libraries, laboratories, study rooms, etc. Special lessons cater for teaching foreign students Russian which helps their studies in their chosen fields. Much attention is devoted to the rational organization of their leisure time.

Many developing countries send their young people to study not only at the Institute of Oil and Chemistry, but at other higher educational institutions. Several hundred foreign students from Afghanistan, Algeria, Burma, Ethiopia, India, Indonesia, Mali, Nigeria, Togo, the PDRY and other countries graduated from republican institutes during the 1960s. In 1979 alone, 1,915 students from 70 countries studied at the republic's higher educational institutions and became engineers, doctors, mathematicians, lawyers, specialists on Oriental study, etc.

The developing countries show great interest in the experience of Azerbaijan's schools of higher education. Specialists in education and culture from these countries make

regular visits to the republic in order to study and apply that experience. Groups from the Bombay Technical Institute, Nigerian University, the Ministry of Education of India, as well as teachers and scientists from Somalia, Bangladesh, Iran and other countries have visited Azerbaijan for this purpose.

Another method used in the republic in the training of specialists from foreign countries is the training courses in institutes for improving and perfecting their qualifications. The Institute of Advanced Training for Doctors has enrolled doctors from the Mongolian People's Republic, Somalia and other countries. Specialists from Cuba, the Mongolian People's Republic, India and other countries took courses in the Institute of Oil and Chemistry and other institutes.

During the ninth five-year plan period (1971-1975), Azerbaijan's 82 teachers and instructors were sent to developing countries to help them train their national personnel on the spot. In the next five-year plan period, the number exceeded 100, and more than 200 students from Azerbaijan went abroad to study. Dozens of translators and interpreters were sent to training centres in developing countries. Many of them also worked on construction projects being carried out with the assistance of Soviet, including Azerbaijanian, specialists.

The role of Azerbaijan's institutes in the development of the school of higher education in developing countries is not limited to sending teaching and research personnel there. The Institute of Oil and Chemistry, by constant assistance to the Algerian Institute of Oil and Gas and the Kabul Polytechnical Institute in sending its teachers and researchers there, also provides them with scientific and methodological literature and textbooks.

Azerbaijanian scientists carry on a great amount of research and organizational work. Azerbaijanian higher school teachers and instructors headed chairs in higher educational institutions in Algeria, Afghanistan and other countries. Azerbaijanian scientists and teachers, while on business trips abroad, systematically compile textbooks and methodological literature which students in the developing states are in great need of. From 1978 till 1980, Professor S. M. Mustafayev had prepared 15 methodological reference

and guide books for the Kabul Polytechnical Institute and a book of problems concerning hydraulics. Assistant Professor S. A. Kuliyev published in Algeria a textbook written in French on the resistance of materials.

Another fact worth mentioning is the following: higher educational and research institutions in Azerbaijan systematically conduct investigations on subjects pertaining to developing countries. The Institute of Oriental Studies attached to the republic's Academy of Sciences is studying a series of problems connected with the historical and present development of the latter. Azerbaijanian scientists and scholars take an active part in international forums on the problems of Asian, African and Latin American countries and the prospects of their socio-political, scientific and technological development. An international symposium convened in Baku on the development of the oil industry in these countries has yielded positive results.

Soviet Azerbaijan has accumulated great experience due to friendly scientific and pedagogical contacts with developing states. It testifies to the possibilities of every country to advance, when given specific socio-political conditions, and become a leader in international connections within the sphere of education.

(g) Conclusions—Chapter VI

To sum up the principles of the latest trends in the present system of training skilled manpower and qualified specialists with higher or secondary specialized school certificates, two words spring to mind: "quality" and "intensification". They aptly express the historically important fact that the republic has made a great stride forward in this sphere, and can now be put on a par with highly developed countries.

Improvement in the quality of education is the main task. The decree of July 19, 1979 adopted by the Central Committee of the CPSU and the USSR Council of Ministers "Further Development of the School of Higher Education and Better Quality of the Training of Specialists" reads: "Attention should be concentrated on the all-round improvement of the quality of professional training and the ideological-political education of specialists, the strengthen-

ing of contacts with production activities and the furthering of communist implementation. Curricula and study plans should constantly be improved upon, greater emphasis should be laid on the fundamental sciences in the theoretical and professional training of polyvalent specialists."[2 3]

Concerted effort is a method for improving quality and, at the same time, a characteristic of the specific feature of the development of the Soviet school of higher education, which distinguishes it from the prior stage of development. The aim is not to accelerate development rates or to obtain any numerical increase. This is a development which concerns the very principles of higher education and its new quality. The model form of intensive development of the system for training specialists and skilled manpower has not yet reached the stage of perfection and is still in its teething stage. The system of higher and secondary specialized education in Azerbaijan, as in all other republics of the Soviet Union, has reached new heights, but is now facing major new and complex problems.

The questions of higher and secondary specialized education cannot, in fact, be solved effectively if separated from the entire system of public education, and the socio-economic context as a whole. Azerbaijan's educational policy takes this into account. Along with the development of higher and secondary specialized education, the elements determining the inner mechanism of the functioning of public education become even stronger and more varied, as do the external elements. It is no exaggeration to say that all these connections acquire a global character. This is why solution to the problems arising from the high development rate of socialist society, and in turn higher and secondary specialized education, requires a global approach.

To effect such an approach is a primary task facing planning. We shall discuss this subject in our next chapter.

[1] Calculated on the basis of: *National Economy of the Azerbaijan SSR in 1980*, pp. 34, 159; *National Economy of the Azerbaijan SSR during 60 Years*, p. 80.

[2] *National Economy of the Azerbaijan SSR during 60 Years*, pp. 61, 62; *National Economy of the Azerbaijan SSR by the 60th Anniversary of the USSR*, Baku, 1982, p. 59.

[3] *National Economy of the Azerbaijan SSR in 1980*, pp. 21, 156, 159.

[4] *National Economy of the Azerbaijan SSR during 60 Years*, p. 33.

[5] *National Economy of the USSR in 1980. Statistical Yearbook*, Moscow, 1981, p. 356; *National Economy of the Azerbaijan SSR by the 60th Anniversary of the USSR*, p. 190.

[6] *National Economy of the USSR in 1980. Statistical Yearbook*, Moscow, 1981, p. 855; *National Economy of the Azerbaijan SSR by the 60th Anniversary of the USSR*, p. 189.

[7] *Directives of the CPSU and Soviet Government on Economic Questions*, Vol. 2, Moscow, 1957, pp. 653-55.

[8] M.M. Mekhtizade and others, op. cit., p. 197.

[9] Magazine, *Azerbaijanskoye neftyanoye khozyaistvo*, No. 9, 1964, p. 45.

[10] A.M. Atakishiyev, *Culture in the Azerbaijan SSR during the Period of Construction of Communism*, Baku, 1971, p. 122 (in Azerbaijanian).

[11] A.M. Atakishiyev, op. cit., p. 123; *Essays on the History of Azerbaijan's Working Class*, Vol. 2, p. 223.

[12] *National Economy of the Azerbaijan SSR by the 60th Anniversary of the Great October Revolution. Jubilee Statistical Yearbook*, Baku, 1977, p. 213.

[13] *Public Education in the USSR. Collection of Documents, 1917-1973*, p. 241.

[14] Calculated on the basis of: *National Economy of the Azerbaijan SSR in 1980*, pp. 162-64; *National Economy of the Azerbaijan SSR during 60 Years*, pp. 207-08.

[15] M.M. Mekhtizade and others, *Flourishing of Public Education in Azerbaijan*, p. 205.

[16] *Public Education in the USSR*, p. 241.

[17] *National Economy of the Azerbaijan SSR in 1980*, p. 233; *National Economy of the Azerbaijan SSR during 60 Years*, p. 289.

[18] Ibid.

[19] *National Economy of the Azerbaijan SSR in 1980*, pp. 234, 235, 240; *National Economy of the Azerbaijan SSR during 60 Years*, pp. 286, 287, 291, 292.

[20] Estimated by the authors on the basis of *National Economy of the Azerbaijan SSR during 60 Years*, pp. 292-93.

[21] *The Scientific and Technological Revolution and Development of Higher Education*, Moscow, 1974, p. 82.

[22] Ibid., pp. 78-83.

[23] Magazine, *Kommunist*, No. 11, 1979, p. 6.

Chapter VII

RELATIONSHIP BETWEEN HIGHER EDUCATION AND PRODUCTIVE WORK

To maintain connections with the national economy, its branches and firms is essential for each higher educational institution. These ties can vary, both geographically and professionally, acquiring different forms and degrees of strength. Each educational institution in the Soviet Union should constantly improve these connections. The effective development of connections between the school of higher education and the socio-economic life of the country is a major criterion in evaluating the former's activity.

A distinctive feature of the connections of the system of higher education with national economic development, just as contacts between individual educational institutions and enterprises, is their planned character. These connections are planned at all levels. This chapter examines three levels of the interconnections between higher education and the national economy, and the three planning levels corresponding to them.

(a) At the micro-economic level: relationship between educational institutions and business enterprises

A study of Soviet Azerbaijan's experience reveals the main lines along which connections between higher education institutions and firms develop. Some result from study procedure as part of curricula. Others are in the research sector of an educational institution in accordance with the requirements of a firm and according to an agreement with it. Another direction is postgraduate refresher courses and

the promoting of young specialists. The planning of the requirement for specialists and their affectation to jobs has been improved, and this is something which concerns both parties, especially the firms concerned.

The study procedure and the company. There is a noticeable trend in the Azerbaijan school of higher education, just as in all other Soviet republics, of integration with production. At the micro-economic level this means that both a higher educational institution and a company should jointly plan and implement the programme of training students, and devote their efforts to organizing the entire study procedure. Vast possibilities exist for this in the republic, and in the country as a whole, for that matter. Moreover, these possibilities have been legally recognized. In effect and according to the law, each higher educational institution is attached, as are general and vocational schools, to specific leading companies.

Relations between an institute and a company are based on the principles of reciprocity and mutual obligations. Both partners are interested in establishing and strengthening their mutually beneficial exchanges.

The experience of Azerbaijanian institutes shows that these contacts are not only useful, but necessary. It is hard to imagine a higher educational institution which does not have the means for conducting the practical training of its students at a company, spread over the years of study. Practical training is regulated by an agreement between an institute and a company which is often signed for a term of five years, that is, the entire period of study, which gives an organized character and assures a better quality in production training. This also makes it possible to define the entire cycle of practical sessions, assign specialists to this work and better supervise it.

Companies provide institutes with modern equipment and room on its premises. Institute branches are sometimes established at companies. Another important point is that leading engineers and other specialists working in companies are often attracted to teaching jobs at institutes. This gives students an opportunity to become acquainted with new technical achievements prior to their inclusion in textbooks. This helps in the revision of textbooks concepts making it possible to delete what can be given students through direct

contacts with discoverers of new techniques and inventions. Students will thereby be able to familiarize themselves during their studies with the development of technology which they may have to work with when they start on their careers. Also, many of them may have to work at the company from where they received their practical training.

The study procedure is linked as closely as possible to the production process and is sometimes conducted at company units. Students are invited to work with new equipment and machines and become familiar with their maintenance. Thus, company sections become almost an integral part of an educational institution. But this does not mean that the institute becomes subordinated to the needs of industry. The school of higher education does not lose its academic and cultural vocation. On the contrary, it is relieved of its excessive academic character for which it is often justly criticized.

As for companies themselves, they also gain from permanent long-term contacts based on agreements with higher educational institutions.

Companies need to be provided with qualified specialists who can be entrusted complex tasks, without having to wait until they adapt themselves to their new functions. It is in the companies' interest to know the specialists who will be working with them. They prefer to have young specialists from institutes who know their particular production conditions before they start working there and would consider their prospects as being within that firm. The experience of leading Azerbaijanian companies shows that the training of such specialists depends largely on establishing and maintaining such contacts with institutions of higher education. Companies can actively and productively influence the elaboration of curricula and the quality of training. Participation in the teaching process is, of course, a delicate matter. It creates new problems which a company has to account with and which enhance the latter's responsibilities. It has to plan for this type of activity, too. However, if by this an enterprise can strengthen its engineering and technical staff with up-and-coming specialists, these additional expenses and responsibilities are fully worthwhile.

Connections with a higher education institution give the company another advantage. Constant contacts with the

teaching staff enrich and renew the theoretical knowledge of a company's engineers and technicians. Institutes take a direct part in arranging the postgraduation training courses for young specialists in enterprises. Leading Soviet companies, particularly in Azerbaijan, widely practice the constant upgrading of their specialists' qualifications with the help of higher educational institutions, which organize courses of varied duration and assign their best teachers and instructors for the purpose.

Joint research. This is one of the most efficient forms of creative cooperation between an institute and a company, which is widely practised in Azerbaijan. The main purpose is to make the research work of educational institutions correspond as closely as possible to the needs of the national economy and to the concrete objectives of scientific and technological development in any one industry. This does not concern routine, day-to-day technical problems, but major scientific problems dealing with important trends and prospects of scientific and technological development. Direct connection with the tasks of the country's economic, scientific-technological and cultural development is a major demand put to the research work of the Soviet institutions of higher education.

Connections between institutes and industry along the lines of scientific research have always existed in Soviet Azerbaijan. However, special attention was given to them during the late 1950s. It was at precisely that period that problem-investigating and branch laboratories began to be set up at institutes to carry out more concrete scientific and technological research.

The first such problem-investigating laboratory in the republic was set up in 1957 at the Azerbaijanian Institute of Oil and Chemistry to study the questions of automation in the oil industry. Two years later, a laboratory of monomer and polymer chemistry was founded there, and at Azerbaijan's State University, a laboratory on the catalytic transformation of oil hydrocarbons. By 1980, 20 problem-investigating laboratories were already functioning at higher educational institutions.

In 1962, the first branch laboratories were opened in the Institute of Oil and Chemistry and the Polytechnical Institute, organized by ministries and departments with a

view to research work being carried out on their behalf with the subsequent utilization of its results in industry. By the end of 1979, there were 15 branch laboratories in Azerbaijan's institutes.

Research work through economic contracts signed with industry and organizations has prominent place in the research activity of institutes. The scope of this work is constantly growing. The assistance rendered by institutes to the national economy, on the basis of contracts, is a most rational means of practical utilization of the results of theoretical research conducted by institutes' scientists. The number and importance of economic contracts signed by institutes are constantly increasing. This can be seen from the following data on the volume of work being done under economic contracts within the structure of the Ministry of Higher and Secondary Specialized Education of Azerbaijan.

1959 — 440,000 roubles
1966 — 1,280,100 "
1970 — 2,213,900 "
1975 — 4,237,100 "
1980 — 7,972,000 "

The increasing number of economic contracts within the planification of institutes, is a powerful impetus to the strengthening of their research activity. This is connected with the fact that this form of research work contributes, first, to the systematic drawing of new specialists from industry to it and the knowledge and experience of as many professors, other teaching and research employees of institutes as possible, and secondly, it opens vast opportunities for an expansion of the scientific laboratory base of institutes, with the help of enterprises.

Such research work also has the advantage of accumulating additional finances derived from the profits of the implementation of their research. These funds are used for expanding the material base of research work. In 1977, from funds accumulated by institutes as a result of their work under contracts, 1,298,900 roubles were spent on requirements of the institutes of the Ministry of Higher and Secondary Specialized Education of the republic; from this amount 1,004,700 roubles were spent on buying research

equipment, and in 1979 the figures were 2,718,600 and 1,702, 400 respectively.

Conditions are constantly improving in Azerbaijan's institutes for conducting research at a modern scientific and technological level. The use of electronic computers in research is a concrete confirmation of this. Some 10 years ago, such equipment was rare in the republic's institutes. In 1979, however, there were dozens of computers and analog calculating machines in Azerbaijan's institutes. They included EC-1020, EC-1022, Minsk-33, Minsk-22, Nairi-3, Nairi-2, Mir-1, Mir-2, and other types. In 1979, 42,548.4 hours of computing were spent on research work. Previously, these machines had been used only in the largest institutions of higher education, such as the University, the Institute of Oil and Chemistry, the Polytechnical Institute, etc., whereas now they are being widely used in all institutes of the republic. During the tenth five-year plan period, electronic computers were acquired for the first time by the Azerbaijan Institute of Construction Engineers, the Kirovabad Teacher Training Institute and the Stepanakert Teacher Training Institute.

The scope and variety of research work in Azerbaijan institutes is vividly illustrated by the data in Table 42. Stability in the general number of subjects elaborated in institutes is directly connected with positive changes undergone in research programmes: gradual elimination of themes with limited potential, and concentrated efforts on behalf of research teams for solutions to major economic problems of national importance.

The effect upon the economy of the implementation of the results of this research is growing regularly. During the ninth five-year plan period (1971-1975), the economic efficiency of these assignments in industry, on a yearly average, was roughly 5.9 million roubles, whereas in 1976 this figure rose to 7.4 million, in 1977 to 15.4 million, in 1978 to 16.6 million, in 1979, 20.1 million, in 1980, 18.3 million, and all in all during the 1976-1980 period, to 77.8 million roubles.

It is significant that in their research work, Azerbaijan's institutes have crossed the boundaries of their republic,

Table 42

COMPLETION OF RESEARCH ASSIGNMENTS IN INSTITUTES OF THE MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION IN AZERBAIJAN

Year	Total number of assignments tackled		Number of assignments completed	
	Total	Under contracts	Total	Under contracts
1970	752	176	489	133
1975	853	271	729	259
1980	877	380	755	258

by fulfilling research orders placed by all-Union departments, large production firms and industrial firms situated in other regions and republics of the USSR.

The level of research in the institutes at present is largely assessed by the degree of the latter's participation in elaborating problems envisaged by national economic planning. This figure, for Azerbaijan's institutes, is sufficiently high. More than half of all research assignments undertaken in Azerbaijan's institutes in 1980 were works envisaged by economic planning decisions taken by the USSR Government and the republic's Council of Ministers and coordination plans of the USSR Academy of Sciences and the Azerbaijan Academy of Sciences. These problems are being tackled by the republic's institutes in close cooperation with scientists of the Azerbaijan Academy of Sciences and research workers in institutes and scientific institutions of other Soviet republics. Azerbaijanian scientists and teachers also actively cooperate with a number of foreign research centres.

The high prestige of the scientists in Azerbaijan's institutes and the high level of research work done by them are confirmed by the increasing number of their inventions. During the five-year period between 1971 and 1975 they received 306 patents. In 1976 this figure was 62, in 1977 —

87, in 1978 — 159, in 1979 —201, in 1980 — 269, and all in all during the 1976-1980 period, this number reached 778. These inventions are systematically patented abroad, in European and American countries. Some inventions of the Azerbaijanian Institute of Oil and Chemistry have been patented in the USA, Italy, Spain, France, Japan and Venezuela, and an invention concerned with the functioning of the internal-combustion engine (the Azerbaijanian Polytechnical Institute) was patented in the USA, the United Kingdom, the Federal Republic of Germany, France, Italy and Japan.

It should also be mentioned that the joint scientific research work of educational institutions and industrial enterprises of Azerbaijan is closely connected and coordinated with the teaching procedure attracting an ever broader section of students into this work. Students are taking part not only in their routine practical work, but also on themes of practical industrial importance assigned by industry. Students' participation in scientific research work is now essential and is reflected in curricula. The scope of this participation is shown by the fact that 90 per cent of all students at institutes of the Ministry of Higher and Secondary Specialized Education of Azerbaijan were engaged in research work in 1980, as against 12 per cent in 1970.

The forms of their participation in this work are many and varied. Research groups in chairs set up under the Azerbaijan Ministry of Higher and Secondary Specialized Education comprised more than 22,000 students in 1978. In 1980 there were 32 recognized student scientific associations. During the 1970-1980 period the number of students participating in work assigned by economic contracts and the state budget increased almost 10-fold. In 1977 alone, the volume of research assignments under contracts in which students took part amounted to 477,000 roubles. Azerbaijanian students also participate actively in all-Union and republican scientific student conferences and contests of student research works.

The development of the scientific potential of the school of higher education and its broader aim of improving professional training, as well as the moral, civic and political education of specialists, accelerating the rates of socio-economic and scientific and technological progress is the

general trend of the republic's present system of higher education. The combination of advanced science with advanced education — such is the main trend of Azerbaijan's school of higher education.

(b) At the graduate employment level: the concept of young specialists and the rational use of specialists

The question of whether a graduate of a higher or secondary specialized educational institution will find a job or not is unknown in socialist society. Already on entering an educational institution students are well aware of the fact that under Soviet legislation they will be provided with jobs according to the acquired specialization and qualification. A young specialist in the Soviet Union who has a diploma, is concerned with other aspects of employment: how large is the range from which he will be able to choose a job according to his or her desire, where will it be and what prospects of promotion will he or she be given while in their first job. Let us consider the matter in greater detail.

This is one of the major aspects of the Soviet system of planning labour resources — the placing of young specialists in jobs which is done in accordance with legislation, on the basis of a policy of total employment true to a socialist state. On the socio-economic plane, socialism is incompatible with unemployment. This is why the state in socialist society assumes responsibility of not only forming the specialist, but also providing a job for him or her, and not just any job, but one in accordance with the specialization and qualification acquired.

It goes without saying that the declaration of this responsibility and principles does not automatically entail its implementation. The main difficulty lies in how to implement it effectively. The problem becomes all the more complex because the environment in which it should be implemented is not at all a stable one. On the contrary, it changes all the time.

The main point in the situation that has taken shape in Azerbaijan at the present development stage is that at the end of the 1960s and beginning of the 1970s, a turning

point was reached in the system of training specialists in the Soviet Union as a whole and in the Azerbaijan republic. Formerly, there was a shortage of specialists all along the line. This was why the planning of their job placements was a relatively simple matter. The main problem was to acquire more specialists, and firms were prepared to take them in ever greater numbers. Things now changed: there are many specialists working in the republic's economy, firms are not "hunting" specialists any longer; they put greater professional demands on them, they need definite specialists in definite numbers and at definite times.

The importance of rational distribution of qualified specialists and the fact that the principle of this problem constantly changes explain the attention which the leading party, government and planning bodies, as well as Soviet and Azerbaijanian public organizations are paying towards the problem. There is no need to enumerate the many decisions adopted in this connection. Let us now turn to the specific features characterizing the problem of job-placing qualified young specialists at the present time.

The term "young specialist" does not refer to the age of the person. In the Soviet planning system this is a very important term and means a person freshly graduated from a specialized educational institution. He or she has definite obligations, just as the firms providing jobs for them have.

Those of the young specialists are few and not hard to assume. This should be emphasized in view of false rumours on the subject being circulated abroad. There is principally one obligation, namely, to work for three years on the job the young specialist has been appointed to by a special employment commission set up in each institute. The commission's decision concerning a young specialist is taken well in advance of graduation (several months earlier) so that he or she can become familiar with the firm in question.

The employment commission is a democratic body consisting of representatives of an educational institution (the rector is the chairman of the commission which comprises members of the leading departments and chairs), of its public organizations (party, trade union and student associations), corresponding ministries and companies themselves, as well as the local authorities. The commission takes

into account the graduate's preferences, the conditions of his future work, his health and family status, etc. The graduate's academic progress, participation in research and social work are also taken into consideration.

Here are a few examples. Providing the qualified specialists with housing is a condition that has to be fulfilled by an enterprise. If the latter does not meet this condition, the specialist has the right to refuse the job. Quite a few companies are located in remote places with difficult climatic conditions. If a graduate has poor health or invalid parents depending on him, he is offered a job in his home area. If it is impossible to comply with the demands legally endorsed by the government with regard to obtaining jobs for young specialists that match their competence, providing them with housing, proper wages or salaries, etc., the educational institution should exert even more efforts to finding suitable jobs for them, or issue them certificates to enable them to do the necessary in this respect.

Young specialists are granted several other privileges. After graduation and before starting work, they are given a month's paid holiday. If firms where they will be working are situated elsewhere, the state grants a transport allowance.

Company managements have no right to dismiss young specialists during the first three-year period of their work. They can be dismissed only with permission of the corresponding Ministry. They cannot be asked to change jobs within the firm if this does not correspond to their speciality and qualification. Party, trade union and other public organizations and local authorities ensure that young specialists are promoted if they deserve it.

In this context mention should be made of the efforts by firms for young specialists' professional integration: arranging a one-year introduction courses when they start their jobs. There is a special programme including measures which help them to acquire practical and organizational methods and additional knowledge in accordance with the technical specificities of a given enterprise.

This one-year course is conducted on the basis of a clear-cut individual programme, and carried out by a tutor. The results of the course are discussed at a special commission headed by the manager of a firm or his assistant. These

course programmes are elaborated in conjunction with educational institutions.

There are also Councils of Young Specialists — public organizations operating at almost all Soviet enterprises employing at least 10 such specialists. The council's activities do not only concern specialists up to 30 years of age working at a firm. It also carries on work among other workers and technicians who are studying, without giving up their jobs, in senior courses of higher or secondary specialized educational institutions.

The range of the Council's activity is wide enough. It draws young specialists into the scientific, technological and public life of their firms, stimulates their inventive and innovation work and helps those who wish to enroll in postgraduate courses.

The Council's verdict on one or another young specialist after careful examination of all aspects of his work is of great importance for his career. The management cannot but heed the Council's views in adopting decisions pertaining to young specialists. This public organization, set up on the initiative of young specialists themselves, has become an important element of the structure of a Soviet enterprise.

Affecting young specialists to jobs, taking into account all the elements of this important joint activity of an educational institution and company, is a key one in planning the development of manpower resources in socialist society. The plan of affecting young specialists to jobs (for firms, it is the hiring of young specialists) is compiled at all levels — from an educational institution and enterprise, on through the republican planning bodies, to the central body, the State Planning Committee. The interests of the two groups of partners should be properly coordinated: on the one hand, the ministries and educational institutions in charge of training specialists, and on the other, the ministries, firms, departments and other organizations which require them. Such coordination should include these components: the duration (the plan for the training of specialists for the given five-year period is coordinated with the economic development plans for the next five-year period), the territorial one (inter-republican cooperation), the financial and also concerning the integration of the employment plan

for young specialists with the general development plan of manpower resources for the whole country and each republic.

At the present economic development stage of Azerbaijan and other Soviet republics, the problem of job planning for young specialists too has become more complex. This is a result of the new situation in demand and supply for specialists which we have already mentioned. When the republic's economy and its system of education took the road to intensive development, the former mechanism of job planning for young specialists became less efficient. This showed up, among other things, by some discrepancies in the structure of specialists' training and the structure of requirements; there were too many specialists in one field, while there was a shortage in others, especially the fewer, more specialized ones.

These discrepancies could not go unnoticed. Discussions on the subject have been going on at all levels, and as a result, two trends in solving this problem have emerged:

— The first trend deals with the time limits in reserving jobs for young specialists. Until recently, this was done six months before graduation. The idea is to alter this deadline and make it a much earlier one. The Decree of the Central Committee of the CPSU and the USSR Council of Ministers of July 1979, which we have already cited, suggested that "provision of jobs should be made earlier, one to three years before graduation, with subsequent transfer to elaborating five-year plans of provision of jobs, information on these plans being given to firms and educational institutions."

— The second trend deals with the establishment of direct contacts between educational institutions and firms concerning provision of jobs to young specialists by concluding mutual agreements between them. Naturally, each of these contracts should be taken into consideration in the general plan of the affectation of specialists to jobs at both the republican and all-Union levels.

A great amount of work is being done in the republic along both these lines, and is planned for a long period. The experience of some Azerbaijanian educational institutions shows that both these methods are already bringing results. They are also important from the point of view of in-

tegration of education and industry within the structure of continuous education.

(c) At the planning level: definition of requirements — the central link in planning the development of the training system

Planning can successfully cope with its functions provided it reacts in time to major changes of a qualitative nature in matters concerning its objective. As we have already seen, these changes in the training system of specialists in the Azerbaijan republic led to a new situation emerging in the late 1960s and early 1970s, which made it possible to envisage a new development stage in this system. We shall now briefly enumerate the major specific features of this situation.

— The ability of the system of higher and secondary specialized education in Soviet Azerbaijan to meet all the republic's economic requirements for specialists.

— The large numbers of specialists working in all branches of the republic's economy.

— The increased integration of a corresponding age group of the population to higher education, with the simultaneous increase in social requirement for this type of education.

In these conditions the planning of higher education was faced with new tasks, although the old ones have not lost their importance. It was necessary to improve the methods of planning which had to be adjusted to these new tasks. Previously, the principle had been to create a system of specialist training which would keep in line with the constantly growing requirements of socio-economic, scientific, technological and cultural progress. This task has been fulfilled, but not removed from the agenda. Its contents are formulated differently: to maintain the level reached and ensure that the system for training specialists adapts constanty to the trend for an increasing number of specialists trained for all branches of the economy, especially the leading and therefore most promising ones.

At the same time, the question of satisfying the social requirement for higher education has taken an exceptionally important place. Indeed, the 18 to 22 age group in Azer-

baijan, and in the entire Soviet Union, for that matter, is the main one to receive a higher education. At present, a considerable part of this group are studying at higher educational institutions. This is a great achievement, of course. However, the social requirement of this age group is growing. Although not all the young people of that age are striving to continue their education after compulsory 10-year schooling, the system of higher education in the republic still cannot fully satisfy all those who wish to acquire a higher education.

As a result, a certain disparity has emerged between the two main functions of education — the training of specialists and satisfying the population's social requirement. This means that individual requirements for higher education are greater than the requirements of society, which is at present unable to fully satisfy this demand. As far as long-term prospects are concerned, the republic will, in due course, be able to completely satisfy individual requirements. The question is whether it is necessary to make efforts to attain this goal today, when society as a whole does not yet share this desire.

The social consequences will differ, according to the decision taken on this important question. In the case of a positive answer, society will be unable to carry out the policy of full employment (by employment we mean a job corresponding to the qualification level and specialization of the worker). A negative answer, and so far today it is negative, causes the dissatisfaction of those who did not succeed in enrolling in a higher educational establishment.

Planning for specialist training cannot ignore these questions. A great deal is being done in the republic to tackle them both in theory and in practice. Although the economic requirements for specialists continue to be the main element in planning the development of the system of higher and secondary specialized education, the need to develop this system faster than the growth rate of the requirements for specialists, is also taken more account of. This corresponds to the consistent policy of the Soviet Union aimed at a continuous rise in the population's educational level. The task facing planning is to embody all this in concrete estimates and determine the rates and possibilities of a stage-by-stage achievement of that aim.

Soviet specialists and scientists have developed methods enabling them to successfully plan measures in this important sphere. These methods are constantly being improved. The main ones are: the so-called method of saturation, the method of nomenclature of jobs, and the method of standard. The first two methods were elaborated during the 1960s, that is to say, during a period when planning had to tackle complex questions emerging in connection with the new situation.

The first method is based on determining the proportion of specialists in the total number of employees at a given enterprise or branch. It should provide an answer to a very important and difficult question: what will the requirement for specialists be for a planned period, based on their proportion per 1,000 personnel? All correlations should be considered: between specialists with higher or secondary specialized education, and their grouping by professions and occupations. This method is used in elaborating long-term plans of enrolment in institutes and secondary specialized technical schools and the graduation of specialists. It is applicable to all branches of material production.

The method of nomenclature of jobs is quite widespread. It is based on compiling a list of all jobs that should be filled by specialists with higher and secondary specialized education. Prospects for the commissioning of new production capacities at company, transformations in the structure of output and the transferring of specialists are taken into consideration. Relevant suggestions from companies and organizations are resumed and modified at a republic level and then coordinated with all-Union organizations. Although this method is concrete, reliable and fairly precise, its shortcoming is that its application does not always permit consideration of the long-term development prospects of the entire economic complex. But its merit lies in the possibility of applying it in planning the sectors producing material goods and those of the non-productive sectors.

The third method, the method of standards, is generally based on a fixed number of specialists in a particular field deemed necessary for a definite proportion of the population they serve. For example, the number of doctors per 10,000 population, the number of teachers for a defin-

ite contingent of children of school age. The precise nature of solutions obtained by applying this method in the sectors of education, public health and culture, is in proportion with the precision of demographic forecasts, that is to say, generally of a high level.

These methods of assessing the requirement for specialists, along with other methods used, are found out in the form of generalized planned estimates and the results are passed on for thorough examination by all departments and organizations concerned as well as by competent experts. The requirements for specialists determined by various methods, become the basis and point of departure for planning their training in educational institutions. The information received in this way is gone into and summarized at each level of planning, from start to finish. The entire organizational and synthesis work to determine the republic's requirements for specialists and compile a plan for their training in the republic is being done by the State Planning Committee under the Council of Ministers of the Azerbaijan republic. The specialists training plan is drawn up as a component part of a plan for the development of the manpower resources and the republic's economy for five years, and divided up over these years. After discussion and endorsement during a session of the highest legislative body of the republic, the Supreme Soviet of Azerbaijan, it is enforced and becomes law, binding all relevant organizations.

An indisputable merit of these methods of compiling plans and the plans themselves is their indissoluble connection with concrete economic policy. A vivid illustration is the fact mentioned in the previous chapter on the rapid growth in the training of specialists with a higher and secondary specialized education.

In defining Azerbaijan's requirements for specialists and to plan for their training, the State Planning Committee proceeds from the fact that the system of higher and secondary specialized education in the republic is an inalienable part of the entire system of specialist training in the USSR, just as the economic complex of the Azerbaijan republic is a component element of the entire national economic complex of the Soviet Union. This is why the training of specialists in the republic is closely connected with the problems and prospects of the economic, social and cultural

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development of the whole country. In turn, the planning of their training in Azerbaijan is closely coordinated with the planning of specialist training on a countrywide scale.

Despite the constant improvement in the methods of determining the requirements of the national economy for specialists, the elaboration of certain aspects of the problem encounters considerable difficulties. The reason for this is twofold. On the one hand, it is a wellknown fact that in planning education, which deals with the aspirations and destiny of man, one cannot evaluate or account for everything. On the other hand, the planning methods themselves are never perfect and need modifying. For example, they give inadequate consideration to the possibilities of the development of individual branches of the economy. Quite a few difficulties are encountered by planning experts in determining the criteria for evaluating the impact of scientific and technological progress on the structure of manpower and specialists. Another aspect of the problem which has not yet been fully elaborated is the territorial aspect of assigning graduates of higher and secondary specialized educational institutions to jobs, that is to say, an aspect which is of special importance for planning at a republican level for it must take into account the plans of other republics as defined in the structure of inter-republican cooperation in this sector.

The training of specialists is a long process. This is why higher and secondary specialized education is an object of long-term planning which must necessarily include anticipation. This specific feature of higher and secondary specialized education shows the road to be followed for improving its planning. Planning must be taken as a whole, and the planning of the specialist training should be regarded as a system of several interconnected five-year plans based on a long-term anticipation. This concept underwent legislation in the USSR in 1978, when the Central Committee of the CPSU and the USSR Council of Ministers adopted a decree, Improvement in Planning and Strengthening of the Economic Impact to Increase Output and Obtain Higher Quality Work, which had a direct bearing on higher and secondary specialized education. This decree established the following system of planning:

— Elaboration of comprehensive anticipation of scientific

and technological progress over a period of 20 years.

— Elaboration of the main trends of the country's economic and social development over a period of 10 years, with corrections and modifications following the first of the two five-year plan periods.

— Establishment of target figures, that is, concrete assignments following the main criteria of development for the coming five-year plan period, planned out for each year.

This is a nationwide system of planning by which plans are coordinated within the structure of a long-term forecast not only by periods and years, but also by the territorial and branch principle. The development of higher and secondary specialized education in Azerbaijan thus becomes an integral part of this countrywide system.

Obviously, such an approach to planning makes it a matter of some importance, where even a slight error can have grave consequences. Planning is an activity requiring great precision. It is this very precision that gives it its value.

The decree previously mentioned emphasizes the need for regular modification of plans. We should note in this connection that some foreign books and articles claim that Soviet plans are not flexible, are incapable of adapting to a changing situation, and that inasmuch as it has been made law, it cannot be changed. Such interpretations are superficial and biased. The main point is that the law as it stands not only encourages modifications to plans but deems them essential.

This new concept has found embodiment. In February 1981, at the 26th Congress of the CPSU, an important document based on this concept was adopted: "Guidelines for the Economic and Social Development of the USSR for 1981-1985 and for the Period Ending in 1990". This document defines development prospects for all Soviet republics. Planning in Azerbaijan, including plans for the development of higher and secondary specialized education, is based on the concept of planning as part of a nationwide system.

(d) Conclusions—Chapter VII

This chapter shows how closely higher and secondary specialized education in Azerbaijan is connected with the

republic's economic development, with individual economic branches and firms. It can be said, without exaggeration, that the two partners cannot successfully function without these contacts continuing to expand and multiply. In Azerbaijan, the general trend is toward their future integration under one form or another within a single system. Naturally, the specific functions inherent in the training of specialists will not disappear with this integration but become more pronounced.

The trend toward integration of higher and secondary specialized education and industry demonstrates the high development level of both in Soviet Azerbaijan. On the other hand, the level reached poses new, rather complex tasks for the system of training specialists in the republic. This, in turn, is reflected in the planning mechanism of higher and secondary specialized education and its methods. Planning more and more frequently faces the problems of specialist training quality and has to take into account the structural changes and the constantly renewed content of education curricular.

How to combine society's requirements for specialists and individual requirements for higher education, which sometimes clash but do not violate the policy of full employment that is man's most essential right, that to work — is a very complicated task facing planning. The concept of nationwide planning which is being used extensively in Soviet planning is an effective way for finding solutions.

Chapter VIII

INTERNATIONAL ASPECTS OF THE EXPERIENCE IN DEVELOPING PUBLIC EDUCATION IN SOVIET AZERBAIJAN

The experience of each nation is of great value in two respects, and especially in such an important matter as public education. A critical analysis of the ground covered enables the people themselves to have a better view of the way ahead; this is an essential condition for successful advancement. But other nations, too, may find this experience beneficial, useful and profitable.

During the 60 odd years of its existence, Soviet Azerbaijan has accumulated a great experience in building and developing the public education system. That was achieved by an uninterrupted, consistent development procedure from mass illiteracy to a high rise in the general educational level of the population, when studies became a normal part of the life of each Azerbaijanian family, each inhabitant of the republic. The links in the system of public education — general schools, vocational schools, secondary technical special schools, institutes — have now become quite familiar and normal to all the people working in Soviet Azerbaijan. Some receive a secondary education which is now the minimum educational level for the rising generation, others proceed further, to academic degrees. The very necessity of acquiring an education, to graduate from lower to higher education, has now become firmly implanted in the minds of the people.

A high educational level has eliminated the previous division of labour, and enables man to be more independent in choosing a trade or profession and to be adaptable, making him socially and professionally more mobile.

The present educational level in the republic gives grounds to assume that it will be possible in the near future to develop public education to such a degree where every person wishing to obtain scientific knowledge and improve his skill or qualification will be able to satisfy this wish. The Azerbaijanian people trod a difficult road to reach this level. But they had a clear aim, a concrete programme and proper political guidance.

The first two decades after the establishment of Soviet power in Azerbaijan were the first important steps of the path trodden. A network of educational centres was created in the republic and illiteracy was almost eliminated. All children had access to school. Universal elementary education was introduced which took in the overwhelming majority of children of school age. Simultaneously, the process of the formation of specialized school, higher and secondary, was proceeding, which successfully undertook the training of skilled personnel. A system of vocational training was also set up. Transfer to tuition in the native language was effected in all sectors of public education A great number of the national intelligentsia were formed in the republic. All that had been accomplished by the end of the 1930s.

Then came the 1940s with their hazards and the first postwar decade. The main results of the period were as follows: school succeeded in overcoming the severe consequences resulting from Hitler's treacherous attack on the country; illiteracy was finally wiped out; compulsory eight-year schooling was introduced; prerequisites were created for transfer to universal compulsory, complete secondary education; the setting up of a ramified network of training workers and specialists began in order to comply fully with the requirements of the republic's socio-economic, scientific and technological and cultural progress. By the end of this period, the modern, highly developed system of public education had been formed in the main. Such was the result of several years' research for optimum variants of organization and management of educational institutions, efforts that enriched the content, forms and methods of teaching and measures to improve the methodology and implementation of planning.

During the 1960s and 1970s, the Azerbaijanian people

scored a major victory in the sphere of education and culture: all children began to receive full 10-year secondary education. The system of vocational and higher and secondary specialized education reached such a level that it was now able to satisfy society's requirements. The republic has now entered the international "arena", training specialists and workers for other countries, primarily for developing countries in Asia, Africa and Latin America.

Backward and illiterate in the past, in need of assistance and support, the Azerbaijan Soviet Socialist Republic is now aiding nations fighting for social and economic progress, relying on the highly developed economy it created and the high level of culture and education it achieved.

What is the significance of Soviet Azerbaijan's experience in the development of public education, what reasons determined its historic achievements and what are the international aspects of this experience? This study gives information for answering these questions. We shall now try to formulate conclusions, emphasizing the aspects that could be of interest to the foreign reader.

In studying the experience of any country, the historical conditions are of principal significance. In Soviet Azerbaijan's case, we shall recall that its progress began during a period of transition from one society to another, from one political state to another. This transition was from backward, colonial conditions to socialist society, to national sovereignty and renaissance. This is an important factor. It is one thing for a country to develop stage by stage when no exceptional events impede the course of its steady advancement. And it is quite another when history advances an aim at destroying the former pattern of development which was degrading for the people and hampered their national progress, and at overcoming the past by revolutionary means.

A transitionary period is nothing out of the ordinary. All nations, sooner or later, pass through it, in one way or another. The developing countries are now passing through such a transitionary period which is somewhat similar to the one when the Azerbaijanian people began their move along the road to national progress. This is why their experience is of interest from an international point of view, because it reflects many problems, difficulties and contradictions which many Asian, African and Latin American

nations are facing today.

What were the main features of this transitionary period as far as the development of public education in the Azerbaijan republic was concerned?

The Azerbaijanian people faced a complex task, that of creating a new model of education which had nothing in common with the old, poor educational system. The elaboration and implementation of new principles of education for everyone, that was the way out from the deplorable state of public education that prevailed in the past, and this was the only solution that could guarantee success.

A transitionary period may result in stagnation, or even lead to regression, if it only changes the façade and retains its old essentials. The experience of Soviet Azerbaijan is interesting and valuable precisely because it was based on the revolutionary breaking of the old and introduction of the new and progressive. Politically, such action forms a reliable basis from which progress can commence.

A new phenomenon cannot be based on old models and principles. The model of education that prevailed in the old colonial society is in contradiction with the society that freed itself from the colonial regime and is striving for political independence. The preservation of this model is nonsense and damaging to culture, education, and national progress, for that matter. In this connection, a question arises: do many developing countries recognize this truth? Doesn't the reason for frequent failures in the field of education lie in ignoring it? Isn't this the reason for the continuing growth of illiteracy in Third World countries?

The model of education adopted by the Azerbaijanian people contains many new and remarkable elements.

First, it is a model of mass public education which completely rejects the elitist principles. The data given in this study can be supplemented by the following figures. In 1981, there were 2.35 million people studying in schools and other educational establishments of the Azerbaijan republic. That was about two-fifths of Azerbaijan's population. Discounting children of preschool age, it appears that every second person in the republic is studying in one way or another. Azerbaijan has become a country of 100 per cent literacy, a society of students. Education here is regarded as the concern of the entire nation and for

the entire nation.

Secondly, this is a model of uniform vocational polytechnical school. In socialist society, general school is the same for all children. All schools teach the established basics of knowledge. Schools cannot differ in any way as far as equal rights and status of pupils are concerned. The concept of vocational school contains two vital elements: it prepares for work, fosters working habits and instills its pupils with the notion of work as a duty. Work is regarded as an indispensable means of educating the rising generation. The polytechnical principle indicates that knowledge can become a great transforming force provided it is connected with practical work, production and the progression of society. The experience of Azerbaijan confirms the theory that the implementation of these principles is a reliable guarantee against abstract education.

Thirdly, it is a model of school in which the principle of vocation and polytechnical education is carried out not within a narrow structure, but in close and direct connection with production, with the personnel in firms, offices and organizations. On the basis of this principle, Azerbaijanian school, just like the entire Soviet school, for that matter, has achieved such connections of quality with production that each school has a production base at a leading enterprise (office or organization). This is an original element of the Soviet model of general school, which ensures its steady, progressive development and is of international interest.

Fourthly, this is a model of general school which not only proclaims the principle of tuition in the native language, but strictly adheres to it. As shown by Azerbaijan's experience, the implementation of this principle not only contributed to the acceleration of mass education and the rapid formation of the numerous Azerbaijanian national intelligentsia. It is also very important to note that the linguistic barrier between the intelligentsia and the popular masses has been completely removed. Only when the intellectuals speak the language of the people can they make a substantial contribution to public education, the nation's culture and its economic progress.

Fifthly, this model of school has an important element of a political character which is necessary for the democratic

development of society. Lenin said that an illiterate person is removed from politics. Indeed, and illiterate or poorly educated person stands apart from the road to democratic development in a society, he does not participate in political life. Such people are needed only by a stagnant, conservative society. Soviet educational policy from the very beginning has been aimed at eliminating illiteracy and the socio-political shackles it entailed. This policy has been vividly embodied in Azerbaijan. It would be difficult to find someone within the republic who would have to remain outside politics because of his low educational level.

The model of education having such characteristics could not have emerged in any other society, under any other socio-political conditions. This model is a product of the October Revolution based on the ideals of the socialist society it proclaimed. From its very inception, the Soviet socialist state gave priority to the development of education. This was a manifestation of not only Marxist-Leninist philosophy of education, but also a political will of the new system and education has never lost its place of priority.

The Soviet Union is a multinational state with an infinite variety of national, cultural, historical and other elements which are part of its development. Soviet Azerbaijan, too, has many such features. In these conditions, dynamism, flexibility and original approaches had to be used. It was impossible otherwise to identify and solve problems. The results obtained in the development of education in Azerbaijan give much food for thought.

Priority does not at all mean that education is an isolated subject, an end in itself. On the contrary, priority means that educational policy has always been, and continues to be, an integral part of the general policy of the entire Soviet state and its Union republics. The book gives figures confirming the character of priority of the development of education in Azerbaijan, and also the maintaining of a constantly high share of expenditure for education both in the republic's budget and its income.

In this connection one cannot fail to remember that in some countries, including developing ones, the educational boom of the 1960s and beginning of the 1970s, was followed by a considerable cut in the education sector of socio-economic development. There are many publications in

which attempts are made to transfer priorities and push education into the background. The authors of this work believe this to be a dangerous tendency which can have an adverse effect on the entire future of a country. References to difficulties, including financial, do not provide sufficient justification. Facts given in this work show that the Azerbaijan republic pursued a policy of priority for the development of education even during the harsh years of the Great Patriotic War of 1941-1945.

Soviet educational policy, as seen by Azerbaijan's experience, is based on planning as an effective method of development and largely owes its successes to this policy. The facts in the work dealing with the role of planning education in the republic and showing the evolution of its aims and methods would provide interesting elements for discussions that took place recently at international fora on the place of planning in education, its limits and possibilities.

It is often said at these fora that the spectacular successes of education and culture in the formerly backward Soviet republics are only due to the exceptionally favourable assistance on the part of the Russian people. This is true, of course. But it was precisely after the victory of the October Revolution that conditions were created in which the Russian people were able to render selfless assistance to other peoples, including the Azerbaijanian people. Russia and Azerbaijan had also existed in a single state under tzarism. But at that time, the Russian people themselves were an object of merciless exploitation. The most characteristic feature of Soviet Russia's assistance to Azerbaijan and other Soviet republics, for that matter, was to bring these republics, which used to be backward outposts of the Russian Empire, up to the level of advanced regions, make them equal partners linked by their socialist connections. An analysis of the information given in this work shows that this aim has been achieved. Today, in comparison to indicators for regions, which were considered part of the metropolitan country before the October Revolution, Azerbaijan does not lag behind either economically, technologically or culturally.

Another important point. Foreign scientists and experts often asked the authors of this work about the place and

role of the Communist Party in the system of state and political power in the USSR and in Soviet Azerbaijan, its role in society's development and its organizational activity. The Constitution of the USSR gives a clearcut answer to this question. It is the following: "The leading and guiding force of Soviet society and the nucleus of its political system, of all state organizations and public organizations, is the Communist Party of the Soviet Union. The CPSU exists for the people and to serve the people.

"The Communist Party, armed with Marxism-Leninism, determines the general perspectives of the development of society and the course of the home and foreign policy of the USSR, directs the great constructive work of the Soviet people, and imparts a planned, systematic and theoretically substantiated character to their struggle for the victory of communism".

Through its activity, the Communist Party of the Soviet Union, including one of its detachments, the Communist Party of Azerbaijan, confirms this constitutional article. Concrete evidence of this is the guidance the Party gives to public education and whose development in Soviet Azerbaijan is the subject of the present study.

STRUCTURE OF THE SYSTEM OF MANAGEMENT AND ADMINISTRATION OF PUBLIC EDUCATION IN THE AZERBAIJAN SSR

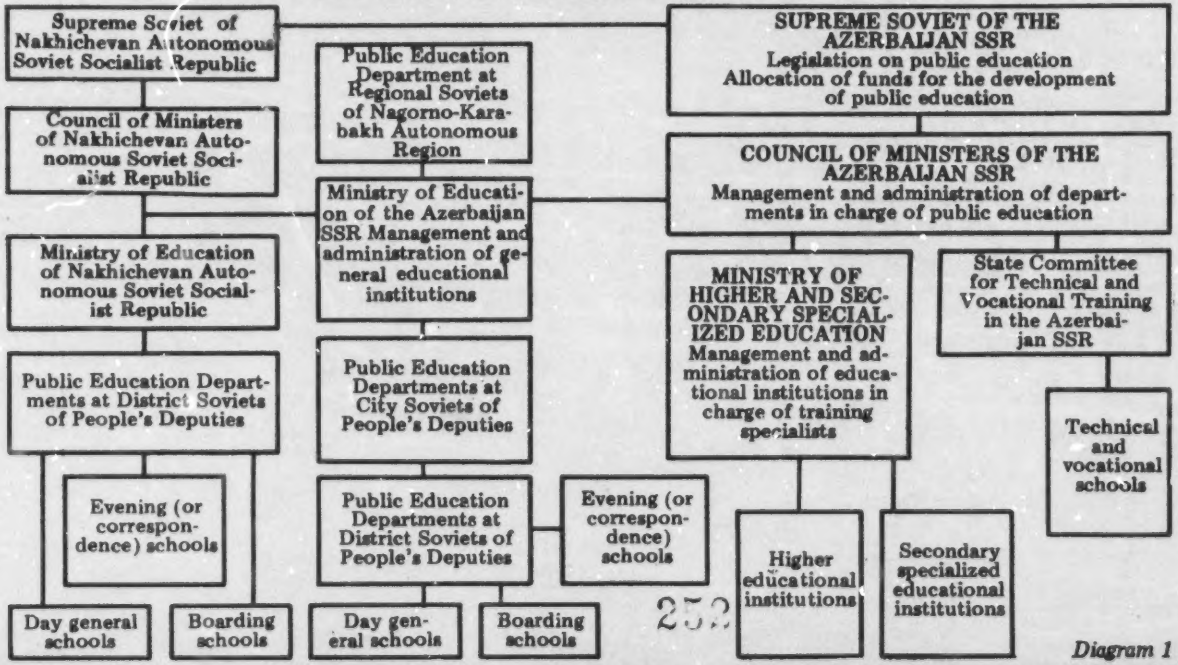
Supreme Soviet of Nakhichevan Autonomous Soviet Socialist Republic
Council of Ministers of Nakhichevan Autonomous Soviet Socialist Republic
Ministry of Education of Nakhichevan Autonomous Soviet Socialist Republic
Public Education Departments at District Soviets of People's Deputies
Evening (or correspondence) schools
Day general schools
Boarding schools
Public Education Department at Regional Soviets of Nagorno-Karabakh Autonomous Region
Ministry of Education of the Azerbaijan SSR Management and administration of general educational institutions
Public Education Departments at City Soviets of People's Deputies
Public Education Departments at District Soviets of People's Deputies
Evening (or correspondence) schools
Day general schools
Boarding schools
SUPREME SOVIET OF THE AZERBAIJAN SSR
Legislation on public education
Allocation of funds for the development of public education
COUNCIL OF MINISTERS OF THE AZERBAIJAN SSR
Management and administration of departments in charge of public education
MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION
Management and administration of educational institutions in charge of training specialists
State Committee for Technical and Vocational Training in the Azerbaijan SSR
Technical and vocational schools
Higher educational institutions
Secondary specialized educational institutions

Diagram 1

THE EDUCATIONAL SYSTEM IN THE AZERBAIJAN SSR

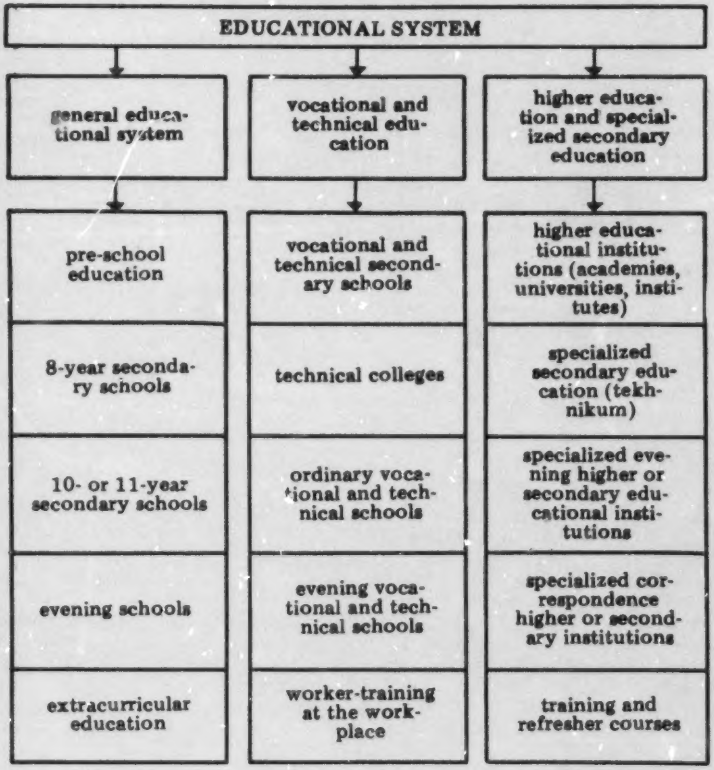
EDUCATIONAL SYSTEM
general educational system
vocational and technical education
higher education and specialized secondary education
pre-school education
8-year secondary schools
10- or 11-year secondary schools
evening schools
extracurricular education
vocational and technical secondary schools
technical colleges
ordinary vocational and technical schools
evening vocational and technical schools
worker-training at the workplace
higher educational institutions (academies, universities, institutes)
specialized secondary education (tekhnikum)
specialized evening higher or secondary educational institutions
specialized correspondence higher or secondary institutions
training and refresher courses

Diagram 2

ANNEX

Table 1

POPULATION IN AZERBAIJAN

Year	Population (000)	including				percentage of entire population			
		Urban	Rural	Men	Women	Urban	Rural	Men	Women
1913	2339	556	1783	—	—	24	76	—	—
1920	1952	406	1546	—	—	21	79	—	—
1940	3274	1212	2062	1643	1562	37	63	51	49
1959	3698	1767	1931	1757	1941	48	52	47.5	52.5
1970	5117	2565	2552	2483	2634	50	50	48.5	51.5
1980	6117	3255	2862	2979	3133	53	47	48.5	51.5
1981	6202	3313	2889	3020	3182	53	47	49	51

Table 2

TERRITORY AND POPULATION OF THE USSR AND UNION REPUBLICS (1981)

	Territory (000 sq. km)	Population (000)
USSR	22,402.2	266, 599
RSFSR	17,075.4	139,165
Ukraine	603.7	50,135
Byelorussia	207.6	9,675
Uzbek Republic	447.4	16,158
Kazakh Republic	2,717.3	15,053
Georgian Republic	69.7	5,071
Azerbaijan Republic	86.6	6,202
Lithuanian Republic	65.2	3,445
Moldavian Republic	33.7	3,995
Latvian Republic	63.7	2,539
Kirghiz Republic	198.5	3,653
Tajik Republic	143.1	4,007
Armenian Republic	29.8	3,119
Turkmen Republic	488.1	2,897
Estonian Republic	45.1	1,485

Table 3

BASIC INDICES OF ECONOMIC AND SOCIAL DEVELOPMENT DURING THE 1940—1980 PERIOD
(1940=100)

	1970	1975	1976	1977	1978	1979	1980
Total industrial output	552	826	892	961	1037	1126	1212
Gross agricultural output	258	346	407	421	457	490	550
Freight turnover:							
railway transport	545	702	711	727	756	760	736
motor transport (times over)	390	660	725	774	847	920	986
Provision of fixed funds by state and cooperative enterprises and organizations, collective farms and population	761	999	1144	1044	1123	1190	1375
excluding funds furnished by collective farms and population	822	1080	1241	1112	1199	1269	1483
Capital investments made by state and cooperative enterprises and organizations, collective farms and population	711	946	953	990	1118	1161	1204
excluding investments made by collective farms and population	757	999	1003	1041	1176	1221	1265
Number of industrial and office workers	262	310	322	336	348	360	371
Labour productivity:							
in the industry	307	412	432	451	472	499	528
in railway transport	281	338	340	344	350	347	326
Average wages and salaries of industrial and office workers	310	353	378	382	389	395	419
Retail turnover by state and cooperative trade	523	705	750	783	809	849	909

Table 4

BASIC INDICES OF ECONOMIC AND SOCIAL DEVELOPMENT
(1961 — 1979)
(percentage of preceding year)

Year	Gross national income	Gross industrial output	including		Gross agricultural output	Provision of fixed funds	Capital investments	Number of industrial and office workers	Labour productivity in industry	Retail turnover by state and cooperative trade
			Production of means of production (group "A")	Production of consumer goods (group "B")						
1961	102	112	112	112	80	103	104	107	105	101
1962	107	107	106	109	120	119	107	105	102	107
1963	100.3	106	108	102	85	95	101	104	102	104
1964	106	105	105	105	110	112	105	108	100.4	108
1965	108	107	107	105	115	95	110	110	103	111
1966	109	107	107	105	102	120	109	105	104	110
1967	104	108	106	112	107	109	104	104	106	110
1968	105	104	103	108	106	94	107	104	104	108
1969	102	105	104	108	94	103	107	104	102	109
1970	109	109	109	109	118	126	111	104	108	108
1971	105	106	106	106	99.4	103	99.8	102	105	106
1972	104	104	102	107	103	87	99.4	103	103	105
1973	108	112	112	113	114	120	109	104	108	107
1974	112	111	111	111	117	96	107	104	108	104
1975	106	109	110	107	97	127	115	103	107	108
1976	109	108	107	112	113	115	100.8	104	105	106
1977	107	108	107	109	103	91	104	104	104	104
1978	107	108	106	112	109	108	113	104	105	103
1979	106	108	108	110	107	107	107	104	106	105

Table 5

ECONOMIC GROWTH RATES DURING THE TENTH FIVE-YEAR PLAN PERIOD
(in comparable prices: billion roubles)

	10th five-year plan period (1976-1980)	compared with 9th five-year plan period (1971-1975)	10th five-year plan in percentage	
			compared with 8th five-year plan period (1966-1970)	compared with 9th five-year plan period (1971-1975)
Gross national product	75.4	23.9	201	146
National income	33.1	10.5	196	146
Total industrial output	40.5	13.8	215	152
Production of means of production (group "A")	29.5	9.7	207	149
Production of consumer goods (group "B")	11.0	4.1	239	159
Gross agricultural production	10.2	3.2	196	147
Freight turnover of all types of transport (bln. of tons/km)	268	33	132	114
Capital investments	9.0	2.4	178	137
Provision of fixed funds	8.0	2.5	187	145

Table 6

VALUE OF ONE PER CENT OF INCREMENT BY FIVE-YEAR PLAN PERIODS (in comparable prices: million roubles)

	8th five-year plan period	9th five-year plan period	10th five-year plan period
Gross national product	62.6	84.1	120.7
National income	28.4	37.7	52.4
Total industrial output	31.1	42.7	63.9
Production of means of production (group "A")	23.9	31.9	47.5
Production of consumer goods (group "B")	7.2	10.8	16.4
Gross agricultural output (average annual production)	8.2	10.3	13.8
Freight turnover of all types of transport (mln. of tons/km)	353	425	519
Capital investments*	36.2	51.2	66.1
Provision of fixed funds*	31.1	43.2	55.2

* Calculated according to total of five-year plan periods

Table 7

NATIONAL INCOME
(in actual prices)

Year	Million roubles	Year	Million roubles
1965	2689	1973	4568
1966	2838	1974	5035
1967	3034	1975	5286
1968	3205	1976	5948
1969	3292	1977	6421
1970	3809	1978	7225
1971	4042	1979	8160
1972	4187	1980	8959

GROWTH IN NATIONAL INCOME
(in comparable prices)

	1975	1976	1977	1978	1979	1980
Growth rates						
1970=100	139	152	162	174	187	204
1975=100		109	116	125	135	147

USE OF NATIONAL INCOME FOR CONSUMPTION AND ACCUMULATION (in actual prices, million roubles)

	1970	1975	1976	1977	1978	1979	1980
National income used for consumption and accumulation	3782	4859	5274	5627	5694	6307	7122
including:							
consumption	2783	3631	3925	4101	4275	4585	5256
accumulation and other expenses	999	1228	1349	1526	1419	1722	1866

Table 8

GROWTH RATES OF TOTAL VOLUME OF INDUSTRIAL OUTPUT

Year	percentage of							
	1913	1920	1940	1950	1960	1965	1970	1975
1913	100							
1920	43	100						
1928	130	302						
1932	241	554						
1937	491	11.4 times over						
1940	594	13.8 times over	100					
1945	465	10.8 times over	78					
1950	828	19.3 times over	139	100				
1955	12.0 times over	28.0 times over	202	145				
1960	16.9 times over	39.3 times over	283	204	100			
1965	23.9 times over	55.6 times over	402	288	141	100		
1970	32.8 times over	76.4 times over	552	396	194	137	100	
1975	49.1 times over	114.3 times over	826	592	291	206	150	100
1976	53.0 times over	123.4 times over	892	640	314	222	162	108
1977	57.2 times over	133.0 times over	961	690	339	239	174	116
1978	61.7 times over	143.5 times over	10.4 times over	744	365	258	188	126
1979	67.1 times over	156.0 times over	11.3 times over	809	397	280	204	136

Table 9

GROWTH RATES OF TOTAL VOLUME OF INDUSTRIAL OUTPUT BY SECTORS

	1970	1975	1976	1977	1978	1979	1980
Entire industry							
1940 = 100	552	826	892	961	1037	1126	1212
1970 = 100		150	162	174	188	204	220
1975 = 100			108	116	126	136	147
Power production							
1940 = 100	728	929	982	1022	1026	1008	1010
1970 = 100		128	135	140	141	138	139
1975 = 100			106	110	110	108	109
Fuel industry							
1940 = 100	185	199	199	191	194	190	187
1970 = 100		108	108	104	105	103	101
1975 = 100			99.6	96	97	95	94
Ferrous and non-ferrous metallurgy							
1940 = 100	1321 times over	1810 times over	1886 times over	2094 times over	2305 times over	2529 times over	2658 times over
1970 = 100		187	143	158	174	191	201
1975 = 100			104	116	127	140	147
Chemical and petrochemical industry							
1940 = 100	120 times over	207 times over	233 times over	252 times over	268 times over	292 times over	303 times over
1970 = 100		172	194	210	223	243	252
1975 = 100			113	122	129	141	146
Engineering and metal-working industry							
1940 = 100	20 times over	34 times over	40 times over	47 times over	54 times over	59 times over	65 times over
1970 = 100		172	203	238	273	302	332
1975 = 100			118	139	159	176	193

Table 9
(cont'd)

	1970	1975	1976	1977	1978	1979	1980
Timber, woodworking and cellulose and paper industry							
1940 = 100	598	942	996	1044	1100	1130	1214
1970 = 100		158	167	175	184	192	203
1975 = 100			106	111	117	120	129
Building materials industry							
1940 = 100	20 times over	27 times over	28 times over	31 times over	34 times over	36 times over	38 times over
1970 = 100		138	145	158	171	183	194
1975 = 100			105	115	123	133	140
Glass and pottery industry							
1940 = 100	847	18 times over	20 times over	20 times over	22 times over	24 times over	24 times over
1970 = 100		208	240	236	264	286	278
1975 = 100			115	113	127	137	134
Light industry							
1940 = 100	380	570	603	649	706	809	894
1970 = 100		150	158	171	186	213	235
1975 = 100			106	114	124	142	157
Food industry							
1940 = 100	367	652	722	784	842	921	1022
1970 = 100		178	197	214	229	251	278
1975 = 100			111	120	129	141	157
Flour and mixed-feed industry							
1940 = 100	184	234	222	248	266	277	279
1970 = 100		127	120	135	144	150	151
1975 = 100			95	106	114	118	119

Table 10

PRODUCTION'S SHARE OF THE MEANS OF PRODUCTION AND OF CONSUMER GOODS IN THE TOTAL VOLUME OF INDUSTRIAL PRODUCTION (percentage)

	1975	1976	1977	1978	1979	1980
Total industrial production	100	100	100	100	100	100
including:						
production of means of production (group "A")	74.4	73.6	73.3	72.3	72.4	72.7
production of consumer goods (group "B")	25.6	26.4	26.7	27.7	27.6	27.3

Table 11

GROWTH RATES OF PRODUCTION OF MEANS OF PRODUCTION AND OF CONSUMER GOODS

Year	Entire industry	including	
		Production of means of production (group "A")	Production of consumer goods (group "B")
		1970 = 100	
1975	150	149	152
1976	162	159	169
1977	174	170	184
1978	188	181	206
1979	204	197	223
1980	220	213	237
		1975 = 100	
1976	108	107	112
1977	116	115	122
1978	126	122	136
1979	136	133	147
1980	147	144	156
		percentage of preceding year	
1965	107	107	105
1966	107	107	105
1967	108	106	112
1968	104	103	108
1969	105	104	108
1970	109	109	109
1971	106	106	106

Table 11
(cont'd)

Year	Entire industry	including	
		Production of means of production (group "A")	Production of consumer goods (group "B")
1972	104	102	107
1973	112	112	113
1974	111	111	111
1975	109	110	107
1976	108	107	112
1977	108	107	109
1978	108	106	112
1979	109	109	108
1980	108	108	106

Table 12

CAPACITY OF ELECTRIC POWER STATIONS AND ELECTRICITY OUTPUT

Year	All electric stations		including hydropower stations	
	capacity of electric stations (000 kw)	electricity output (mln. kw/h)	capacity of electric stations (000 kw)	electricity output (mln. kw/h)
1920	56.4	122	—	—
1928	110	377	—	—
1932	164	618	3	7
1937	234	1387	—	—
1940	296	1827	7.7	24
1950	488	2924	11.9	29
1960	1415	6590	393	1963
1965	2173	10418	395	1632
1970	2741	12027	411	1022
1975	2999	14671	419	1406
1976	3051	15318	469	1679
1977	3045	15760	468	1455
1978	3044	15926	468	1973
1979	3039	15187	468	1287
1980	2989	15045	468	1098

Table 13

GROWTH RATES OF GROSS AGRICULTURAL OUTPUT
(in all types of economy)

Year	Gross agricultural output (plant-growing and cattle-breeding)	Output of plant-growing	Output of cattle-breeding
		1940 = 100	
1945	76	65	114
1950	132	124	160
1955	159	145	209
1960	197	169	302
1965	203	184	285
1970	258	238	351
1975	346	338	427
1976	407	407	432
1977	421	413	465
1978	457	452	498
1979	490	500	500
1980	550	580	520
		1970 = 100	
1975	134	142	121
1976	152	171	123
1977	157	173	132
1978	170	189	141
1979	183	209	142
1980	205	243	148
		1975 = 100	
1976	113	120	101
1977	117	122	109
1978	127	133	117
1979	137	148	117
1980	154	171	122

Table 14

INCREASE IN THE PEOPLE'S MATERIAL AND CULTURAL STANDARDS

	1920	1940	1960	1970	1980
Growth in national income (1970 = 100)					
total				100	204
per capita				100	172
Growth in real per capita income (1970 = 100)				100	142
Growth in industrial output of consumer goods (group "B", 1970 = 100)				100	237
Grants and privileges received by the population from public consumption funds					
total, mln. roubles		...	374	973	1818
per capita, roubles		...	96	188	295
Total floorspace of city housing (by end of year)					
total, mln. sq. m.	3.5*	6.5	15.8	24.4	35.9
average per city dweller, sq. m.	7.2	5.2	8.1	9.4	10.8
Total number of students, (000 persons)	...	...	878	1808	2364
including:					
in general schools	79	695	725	1438	1567
in secondary vocational and technical schools	...	...	...	6	63
in secondary specialized institutions	5	17	27	71	79
in higher educational institutions	3	15	36	100	107
Number of children in permanent preschool institutions (by end of year), 000	3.7	57	53	111	147
Number of public libraries (by end of year)	61	1384	2495	2923	3837
Number of books and magazines in them, mln. copies	0.3	3.3	18.6	25.4	32
Number of film projecting units (by end of year)	7	426	1301	2004	2302
Number of visits to the cinema, mln.	...	7.8**	38.7	56.4	62.2

Table 14
(cont'd)

	1920	1940	1960	1970	1980
Number of visits to the theatre, 000	...	1776	1183	1494	1971
Book circulation, mln. copies	0.1	5.0	9.9	11.6	11.8
Newspaper circulation, mln. copies	...	0.6	0.8	2.1	2.7
Annual circulation of magazines and other periodicals, mln. copies	0.02*	0.7	3.4	25.0	33.8
Number of doctors (by end of year)					
total, 000	0.5	3.3	2.4	13.1	20.7
per 10,000 inhabitants	2.4	10.0	23.7	25.0	33.4
Number of hospital beds (by end of year)					
total, 000	2.0	12.6	27.4	48.8	60.0
per 10,000 inhabitants	10.1	37.8	69.1	93.4	96.7

* 1922
** Data on the Ministry of Culture's film projecting units

Table 15

POPULATION DISTRIBUTION ACCORDING TO SOURCE OF INCOME
(on the basis of the 1979 census)

	000 persons
Entire population	6026.5
Engaged in national economy (except those engaged in personal subsidiary economy)	2634.9
Students on scholarship	180.2
People on retirement and others supported by the state*	505.8
Dependants (children, elderly and other people engaged only in household chores and in the upbringing of children), as well as members of families of collective farmers, industrial and office workers engaged in personal subsidiary economy	2700.3
Persons with other sources of income unwilling to specify	5.3

* At the beginning of 1979, there were 722,000 people on retirement in the republic (in 1970 the figure was 614,000). According to census data, only those with an old-age pension as their main source of living were included. Those on retirement who continued to work were included in the group considered as actively employed.

Table 16

AVERAGE ANNUAL NUMBER OF INDUSTRIAL AND OFFICE WORKERS IN THE NATIONAL ECONOMY (000 persons)

Year	Total of industrial and office workers	Including workers (with auxiliary service personnel and watchmen)
1940	486	325
1945	409	...
1950	571	...
1955	623	...
1960	748	505
1965	1045	714
1970	1273	867
1975	1506	1024
1976	1566	1069
1977	1634	1124
1978	1692	1161
1979	1752	1203
1980	1802	1234

Table 17

GROWTH RATES OF AVERAGE ANNUAL NUMBER OF INDUSTRIAL AND OFFICE WORKERS IN THE NATIONAL ECONOMY

Year	percentage of		
	1940	1970	1975
1945	84		
1950	118		
1955	128		
1960	154		
1965	215		
1970	262		
1975	310	118	
1976	322	123	104
1977	336	128	108
1978	348	133	112
1979	360	138	116
1980	371	142	120

Table 18

AVERAGE ANNUAL NUMBER OF WOMEN AS INDUSTRIAL AND OFFICE WORKERS IN THE NATIONAL ECONOMY

Year	Number of women as industrial and office workers, 000 persons	Percentage of women in total number of industrial and office workers
1940	165	34
1945	195	48
1950	228	40
1955	238	38
1960	282	38
1965	414	40
1970	518	41
1975	640	43
1976	664	42
1977	696	43
1978	726	43
1979	755	43
1980	768	43

Table 19

GROUPING OF INDUSTRIAL ENTERPRISES ACCORDING TO NUMBER OF WORKERS IN 1979
(percentage of total)

	Number of enterprises	Gross output	average annual number		Average annual value of fixed production funds in industry	Consumption of electrical energy
			Total number of production personnel	including workers		
Enterprises with independent budgets (excluding electric power stations, electric power networks and heat and power networks)	100	100	100	100	100	100
including average annual number of workers:						
up to 100	39.4	13.7	4.5	4.1	4.4	4.1
101 — 200	20.0	10.9	6.9	6.9	4.1	6.9
201 — 500	19.6	12.2	14.5	14.5	6.6	14.5
501 — 1000	10.2	13.3	17.3	17.6	9.1	17.6
1001 — 3000	8.5	31.0	31.9	32.5	35.5	32.4
3001 and over	2.3	18.9	24.9	24.4	40.3	24.5

Table 20

NUMBER OF WORKERS IN CHARGE ON COLLECTIVE FARMS (EXCEPT FISHING COOPERATIVES) ACCORDING TO POST AND DEGREE OF EDUCATION (1 April 1980)

	Total	including		Percentage of total number of persons holding this post	
		With higher education	With secondary specialized education	With higher education	With secondary specialized education
Collective farm chairmen	618	450	141	73	23
Collective farm deputy chairmen	28	13	12	46	43
Chief agronomists, chief veterinarians, chief engineers	1726	898	754	52	44
Agronomists	1070	278	752	26	70
Veterinary surgeons	410	106	288	26	70
Veterinaries, veterinary assistants, veterinary technicians	709	85	565	12	80
Engineers and technicians	1261	151	839	12	67
Team leaders in plant culture	4943	158	1960	3	40
Heads or repair shops	240	26	132	11	55
Heads and team leaders of animal husbandry	1906	84	690	4	36
Work superintendents, construction team leaders	330	13	194	4	59
Economists and planning experts	704	326	314	46	45

Table 21

NUMBER OF WORKERS IN CHARGE OF STATE FARMS ACCORDING TO POST AND DEGREE OF EDUCATION (1 April 1980)

	Total	including		Percentage of total number of persons holding this post	
		With higher education	With secondary specialized education	With higher education	With secondary specialized education
State farm managers	681	597	70	88	10
Heads of farms	229	69	98	30	43
Chief agronomists, chief veterinaries, chief engineers	2446	1498	849	61	35
Agronomists	1575	534	987	34	63
Veterinary surgeons	509	185	308	36	61
Veterinaries, veterinary assistants, veterinary technicians	982	131	738	13	75
Engineers and technicians	1775	249	1066	14	60
Team leaders in plant culture	5958	263	3234	4	54
Heads of repair shops	374	44	203	12	54
Heads and team leaders of animal husbandry	1703	116	681	7	40
Work superintendents, construction team leaders	496	72	322	15	65
Economists, planning experts	1147	583	465	51	41

Table 22

EDUCATIONAL EXPENDITURE FROM AZERBAIJAN REPUBLIC STATE BUDGET
(million roubles)

	1940	1950	1960	1970	1980
Total educational expenditure	35.1	69.5	112.1	295.1	516.9
including:					
General education and upbringing of children and adolescents and educational work with adults	26.3	51.5	88.2	219.8	363.8
Higher educational institutions	4.6	6.4	17.5	38.6	65.6
Secondary specialized educational institutions	4.2	5.6	6.4	16.3	28.3
Vocational and technical training	During these years vocational and technical training was financed by a different allocation in the state budget			20.4	59.2

Table 23

NUMBER OF PEOPLE WITH HIGHER AND SECONDARY EDUCATION
(complete and incomplete)

	000 people				Per 1,000 inhabitants aged 10 and over			
	As of 17 January 1939	As of 15 January 1959	As of 15 January 1970	As of 17 January 1979	1939	1959	1970	1979
Number of people with higher and secondary education (complete and incomplete)	256.1	1044.5	1679.8	3041.6	113	400	471	652
including: complete higher	21.6	77.2	158.0	301.2	10	30	44	65
incomplete higher		33.8	62.1	92.5		13	17	20
secondary specialized		115.5	202.2	373.9		44	57	80
general secondary	234.5	214.8	513.7	1184.8	103	82	144	254
incomplete secondary		603.2	743.8	1089.2		231	209	233

Table 24

NUMBER OF STUDENTS ACCORDING TO TYPE OF STUDY
(beginning of school year; 000 persons)

	1920/21	1940/41	1950/51	1960/61	1970/71	1975/76	1979/80	1980/81
Total number of students	...	...	936	878	1808	2158	2335	2364
including:								
in general schools	79.4	695	660	725	1438	1624	1583	1567
in vocational and technical training schools	...	12	14	9	46	69	95	104
in secondary specialized educational nstitutions	5.0	17	20	27	71	72	80	79
.n higher educational institutions	2.6	15	28	36	100	99	105	107
those acquiring new trades and improving their skills in enterprises, offices, on collective farms, and benefiting from other forms of education (except the political education network)	...	...	214	81	153	294	472	507

NUMBER OF ALL TYPES OF
NUMBER OF PUPILS
(beginning of

	1920/21			1940/41			1950/51	
	Number of schools	Number of pupils (000 persons)	Number of teachers (000 persons)	Number of schools	Number of pupils (000 persons)	Number of teachers (000 persons)	Number of schools	Number of pupils (000 persons)
Number of general schools and number of pupils and of teachers	937	74.9	2.6	4436	695.2	23.2	4233	660.2
including:								
primary, incomplete secondary and secondary schools	937	74.9		3575	654.9		3630	622.1
schools for the working and rural youth and schools for adults	—	—		861	40.3		603	138.1
out of total number of students — number of students grouped according to grade:								
primary education		74.9			411.7			402.7
secondary complete and incomplete education		—			283.5			256.1

GENERAL SCHOOLS.
AND TEACHERS
school year)

	1960/61			1970/71			1980/81		
Number of teachers (000 persons)	Number of schools	Number of pupils (000 persons)	Number of teachers (000 persons)	Number of schools	Number of pupils (000 persons)	Number of teachers (000 persons)	Number of schools	Number of pupils (000 persons)	Numb of teach (00 perso
26.4	4433	724.8	46.0	5096	1438.0	73.0	4237	1567.0	112.
	3837	672.4		4343	1356.0		3973	1422.0	
	596	52.4		753	82.0		264	145.0	
		397.6			514.0			476.0	
		327.2			924.0			1119.0	

Table 26

NUMBER OF PUPILS IN GENERAL SCHOOLS ACCORDING TO FORM
(beginning of school year)

	1940/41	1950/51	1960/61	1970/71	1980/81
Number of pupils (000 persons)	695	660	725	1438	1567
including:					
1st to 3rd forms	311	292	309	514	476
4th to 8th forms	354	343	354	727	752
in particular in 8th form	30	22	47	124	165
in 9th and 10th (11th) forms	30	25	62	197	339

Table 27

GRADUATES FROM GENERAL SCHOOLS
(000 persons)

Year	Graduates from incomplete secondary schools			Graduates from full secondary schools		
	Total	including		Total	including	
		day	evening		day	evening
1965	76.5	63.3	13.2	37.4	20.4	17.0
1970	104.2	95.9	8.3	66.3	49.9	16.4
1975	161.2	148.5	12.7	102.9	81.0	21.9
1976	162.4	150.4	12.0	113.1	87.7	25.4
1977	162.9	153.0	9.9	123.3	94.2	29.1
1978	165.4	155.8	9.6	129.0	97.3	31.7
1979	168.9	159.1	9.8	130.5	99.7	30.8
1980	163.5	153.9	9.6	130.1	99.2	30.9

Table 28

NUMBER OF PEOPLE HAVING RECEIVED SECONDARY EDUCATION (GENERAL AND SPECIALIZED) (000 persons)

Year	Total	Annual average
1961 — 1965	128.8	25.8
1966 — 1970	367.9	73.6
1971 — 1975	472.5	94.5
1976 — 1980	709.5	141.9
1976	125.1	
1977	138.7	
1978	146.2	
1979	149.6	
1980	149.9	

During the 1960-1980 period, 1,707,700 persons acquired secondary education (general and specialized), 1,533,300 graduating from secondary general schools, 104,100 from technical and other secondary specialized educational institutions (where they had been accepted after their incomplete secondary school studies) and 70,300 from secondary vocational and technical schools.

Table 29

POLYTECHNICAL TRAINING OF PUPILS OF SECONDARY DAY GENERAL SCHOOLS
(beginning of 1980-1981 school year)

	Total	including	
		towns	rural areas
Number of secondary day general schools with polytechnical training	2003	613	1390
Number of pupils from 9th and 10th (11th) forms in training (000 persons)	208.2	87.2	121.0
also:			
in enterprises and organizations (percentage)			
industry	27.8	52.2	10.3
agriculture	29.1	0.5	49.7
transport and communication	9.0	12.1	6.8
construction	0.3	0.6	0.0
trade and public catering	2.5	5.9	—
other sectors of the national economy	31.3	28.7	33.2

One of the major tasks of the general school is to prepare pupils for socially useful work.

At present 99.95 percent of secondary day general schools in the republic give full training courses to students. Students from 9th and 10th (11th) forms receive their training while working in enterprises, organizations, on collective and state farms, in vocational and technical training centres, with student and other working teams, in school workshops, laboratories, etc.

Table 30

CONSTRUCTION OF GENERAL SCHOOLS

Year	Schools built and funded by State		including				Construction of schools funded by collective farms	
			urban		rural			
	schools	pupil accommodation (000)	schools	pupil accommodation (000)	schools	pupil accommodation (000)	schools	pupil accommodation (000)
1920 — 1928	185	27.0	24	7.7	161	19.3	—	—
1929 — 1940	653	186.9	135	66.7	518	120.2	—	—
1941 — 1945	6	1.8	1	0.4	5	1.4	—	—
1946 — 1960	181	68.2	145	50.1	136	8.1	522	45.7
1961 — 1970	356	218.8	130	178.2	126	40.6	632	81.8
1971 — 1980	435	317.0	131	153.6	295	163.4	245	37.5

Table 31

NUMBER OF VOCATIONAL AND TECHNICAL SECONDARY SCHOOLS AND NUMBER OF STUDENTS
(as of 1 January)

Year	Number of schools	Number of students (000 persons)
1961	35	7.9
1966	46	17.9
1971	84	43.8
1976	135	66.8
1977	144	75.2
1978	149	79.9
1979	156	84.9
1980	159	93.6
1981	173	99.8

ENROLMENT IN VOCATIONAL AND TECHNICAL SECONDARY SCHOOLS

Year	Total number of people enrolled (000 persons)
1960	6.5
1965	15.0
1970	35.7
1975	55.2
1976	56.5
1977	60.8
1978	60.8
1979	66.2
1980	68.2

Table 32

CURRICULUM

for the training of skilled workers in vocational and technical schools (trade: repairmen for the maintenance of technological installations in oil-processing and petrochemical industries. Training course: one year)

Subjects	Number of lessons
General production training	1,184
Special technology	157
Work safety techniques	45
Production technology	42
Study of materials	40
Technical draftsmanship	54
Political economy	69
Soviet law	25
Physical education	54
Counseling	40
Exams	18
Total	1,728
Aesthetic education	50
Grand total	1,778

Table 33

CURRICULUM

for a secondary rural vocational technical school
Training: tractor drivers and agricultural mechanics

Cycles and subjects	Study period in number of lessons				
	Total	Theoretical training	Laboratory and practical training	Training in educational farms and in school workshops	Production practice
Technical cycle					
Fundamentals of agronomy	97	69	28	—	—
Organization and technology of mechanized work	1083	135	300	72	576
Tractors	460	250	210*	—	—
Agricultural machines	413	173	240*	—	—
Automobiles and traffic code	91	91	—	—	—

Table 33
(cont'd)

Cycles and subjects	study period in number of lessons				
	Total	Theoretical training	Laboratory and practical training	Training in educational farms and in school workshops	Production practice
Fundamentals on the properties of materials and on maintenance work	472	106	—	366	—
Fundamentals of economics and general production	50	50	—	—	—
Technical draftsmanship	61	61	—	—	—
Elementary military training	140	140	—	—	—
Physical education	212	212	—	—	—
Total	3079	1287	778	438	576
General educational cycle					
Russian language and literature	229	229	—	—	—
Mathematics	349	349	—	—	—
History	245	245	—	—	—
Social sciences	71	71	—	—	—
Geography	40	40	—	—	—
Biology	44	44	—	—	—
Physics	321	321	—	—	—
Astronomy	20	20	—	—	—
Chemistry	210	210	—	—	—
Total	1529	1529	—	—	—
Grand total	4608	2816	778	438	576
Counseling (total for a group)	200				
Exams	90				
Optional subjects					
Foreign language	140				
Aesthetic education	50				
Total training period	5088				

* In addition to the curriculum, 16 lessons are designated to teach each trainee, individually, how to drive tractors and self-propelled harvest machines. Those wishing to obtain a driver's licence may take additional 32 extracurricular lessons.

Table 34

HIGHER AND SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS AND THEIR STUDENTS
(beginning of school year)

Academic year	Number of higher institutions	Number of students (000 persons)	Type of education			Number of secondary specialized institutions	Number of students (000 persons)	Type of education		
			day	evening	correspondence			day	evening	correspondence
1920/1921	2	2.6	2.6	—	—	3 (1914/1915)	0.5	0.5	—	—
1940/1941	16	14.6	11.3	0.1	3.2	91	17.4	17.3	—	0.1
1950/1951	20	28.6	18.4	0.3	9.9	81	20.3	18.9	0.1	1.3
1960/1961	12	36.0	18.5	3.4	14.1	66	27.0	15.4	4.4	7.2
1970/1971	13	100.1	47.3	17.7	35.1	79	70.8	43.3	12.0	15.5
1980/1981	17	107.0	57.8	20.1	29.1	75	79.0	48.4	13.3	17.3

Table 35

SPECIALIST GRADUATES FROM HIGHER AND SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS
(000 persons)

Year	Total number of graduates from higher institutions	Type of education			per 10,000 inhabitants	Total number of graduates from secondary specialized educational institutions	Type of education			per 10,000 inhabitants
		day	evening	correspondence			day	evening	correspondence	
1940	2.5	2.5	—	—	8	4.1	4.1	—	—	12
1950	4.8	3.5	—	1.3	16	4.9	4.8	—	0.1	17
1960	5.5	4.0	0.2	1.3	14	7.3	5.4	1.0	0.9	19
1965	5.9	3.4	0.8	1.7	13	9.4	4.8	1.6	3.0	21
1970	13.8	6.9	2.1	4.8	27	18.1	10.4	3.3	4.4	35
1980	18.1	10.9	2.7	4.5	29	22.6	14.7	2.8	5.1	37

Table 36

NUMBER OF STUDENTS IN HIGHER EDUCATIONAL AND IN SECONDARY SPECIALIZED EDUCATIONAL INSTITUTIONS PER 10,000 INHABITANTS IN THE UNION REPUBLICS
(beginning of school year)

	Higher educational institutions					Secondary specialized educational institutions				
	1940/41	1965/66	1970/71	1975/76	1980/81	1940/41	1965/66	1970/71	1975/76	1980/81
USSR	41	166	188	190	196	50	158	130	177	173
RSFSR	43	185	204	212	219	53	178	199	200	190
Ukrainian SSR	47	151	170	169	176	47	142	168	159	160
Byelorussian SSR	24	120	154	170	183	39	141	161	156	168
Uzbek SSR	28	159	192	174	172	37	99	134	131	147
Kazakh SSR	16	120	151	152	173	47	142	165	164	176
Georgian SSR	77	170	189	168	169	71	84	112	100	105
Azerbaijan SSR	44	144	191	173	173	52	120	135	126	127
Lithuanian SSR	20	155	180	188	206	22	193	206	206	198
Moldavian SSR	10	108	124	115	128	17	98	143	142	147
Latvian SSR	52	145	171	182	186	50	168	163	169	166
Kirghiz SSR	19	123	162	151	152	38	121	139	133	135
Tajik SSR	15	119	149	144	142	38	90	118	109	100
Armenian SSR	82	174	214	190	186	66	140	185	190	166
Turkmen SSR	22	103	131	122	124	57	115	129	115	118
Estonian SSR	45	165	161	163	172	20	213	175	173	161

Table 27

NUMBER OF TEACHERS IN DAY GENERAL SCHOOLS OF THE MINISTRY OF EDUCATION ACCORDING TO LEVEL OF EDUCATION AND LENGTH OF SERVICE
(beginning of school year)

	Number of teachers (000 persons)	out of this total percentage of teachers with						
		an education					a seniority of	
		higher	teachers' training institutions	secondary pedagogical	secondary specialized (non-pedagogical) and secondary general	without full secondary education	up to 5 years	25 years and over
All teachers (including school principals)*:								
1965/66	55.9	45.1	15.0	35.2	4.1	0.6	22.5	14.3
1970/71	65.5	51.7	13.9	30.3	3.9	0.2	23.4	18.7
1975/76	85.4	63.7	10.0	22.1	4.2	0.0	26.5	17.0
1976/77	88.3	65.7	9.0	22.1	3.2	0.0	25.6	17.3
1977/78	91.2	66.9	8.3	21.5	3.3	0.0	25.9	17.8
1978/79	94.1	68.3	7.9	20.5	3.3	0.0	24.8	18.2
1979/80	97.2	69.5	7.1	20.0	3.4	0.0	23.9	17.7
1980/81	99.4	70.6	6.5	20.1	2.3	0.0	23.9	17.4
including:								
principals of primary and 8-year schools	1.6	98.3	1.5	0.2	0.0	0.0	4.4	30.0
principals of secondary schools	2.0	99.9	0.1	0.0	0.0	0.0	1.8	41.5
assistant principals of 8-year schools	1.2	95.9	2.9	1.2	0.0	0.0	9.5	22.0

Table 37
(cont'd)

	Number of teachers (000 persons)	out of this total percentage of teachers with						
		an education					a seniority of	
		higher	teachers' training institutions	secondary pedagogical	secondary specialized (non-pedagogical) and secondary general	without full secondary education	up to 5 years	25 years and over
assistant principals of secondary schools	4.4	99.5	0.3	0.2	0.0	0.0	7.8	24.1
teachers of 1st-10th (11th) forms, excluding teachers who are school principals	77.7	72.7	7.6	19.0	0.7	0.0	24.9	17.7
teachers of music, singing, drawing, physical education and manual training	12.5	36.2	3.7	41.8	18.3	0.0	30.8	32.0

* As a general rule, school principals are also teachers

Table 38

NUMBER OF WOMEN TEACHERS OF DAY GENERAL SCHOOLS OF THE MINISTRY OF EDUCATION
(beginning of school year)

	Number of teachers, exclusive of part-time teachers (000 persons)	including women	Percentage of women in total number of teachers and school principals
All teachers, including school principals			
1965/66	55.9	24.3	43.5
1970/71	65.5	29.2	44.5
1975/76	85.4	39.6	46.4
1976/77	88.3	41.2	46.6
1977/78	91.2	43.2	47.3
1978/79	94.1	44.7	47.5
1979/80	97.2	46.1	47.4
1980/81	99.4	48.0	48.3
including:			
primary and 8-year school principals	1.6	0.1	8.2
secondary school principals	2.0	0.3	13.1
8-year school assistant principals	1.2	0.2	15.3
secondary school assistant principals	4.4	1.0	21.9
teachers of 1st-10th (11th) forms, excluding teachers who are school principals	77.7	42.4	54.6
teachers of music, singing, drawing, physical education and manual training	12.5	4.0	32.3

The book

"The experience of each nation", to quote from the present volume, "is of great value in two respects, and especially in such an important matter as public education. A critical analysis of the ground covered enables the people themselves to have a better view of the way ahead; this is an essential condition for successful advancement. But other nations, too, may find this experience beneficial, useful and profitable". These words express, very exactly, the motive which inspired a team of Azerbaijan specialists to prepare, in co-operation with the International Institute for Educational Planning, a study of the experience of Soviet Azerbaijan in the development of its educational and training system.

Since 1920, i.e., after the establishment of Soviet power, Azerbaijan, one of the fifteen republics of the Soviet Union, has come an impressive distance in education. Starting with a practically illiterate population, Azerbaijan has reached a very high level of education for all, with compulsory secondary schooling throughout the republic.

This record is the result of the original measures laid down by Soviet Azerbaijan, as well as of the varied types of education available. This diversity and originality together make up the richness of its educational experience. And it is for this reason that the present volume is published for readers in all countries of the world.

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